

PIRELLI & CO., Milan, Italy,
GENERAL INDIARUBBER, GUTTAPERCHA
AND ASBESTOS INDUSTRY.
INSULATED WIRES AND CABLES IN EVERY SYSTEM.
Works at Spezia for the Submarine Cables.
GREAT EXPORT.
GRAND-PRIX at the Paris Exposition, 1900.

The BEST BUCKLES for ARCTICS
ARE MADE BY
THE WELD MFG. CO.,
41 Lincoln Street, - - Boston.

"Cravenette"
RAIN COATS

Must have this Circular
Trade Mark stamped in
inside of coat.....



INDIA RUBBER WORLD

CAOUTCHOUC

HEVEA BRASILIENSIS

DIODOROS GUTTA

GUTTA-PERCHA

Edited by HENRY C. PEARSON—Offices, No. 150 Nassau Street, NEW YORK.

Vol. XXVI. No. 5.

AUGUST 1, 1902.

35 Cents a Copy.
\$3.00 Per Year.

THE ALDEN RUBBER CO., BARBERTON RUBBER WORKS, MANUFACTURERS OF RUBBER GOODS.

BICYCLE
AND
VEHICLE
TIRES,
HOSE,
PACKING,
VALVES.



MOLDED
GOODS,
FRUIT JAR
RINGS.
WHITE
TUBING
A SPECIALTY.

THIS TRADE MARK GUARANTEES FULL VALUE.

AKRON, OHIO and BARBERTON, OHIO, U.S.A.
165 Lake Street, Chicago, Ill.

Akron Office, Arcade Block—Main Office and Works at Barberton.
LONG DISTANCE TEL., AKRON EXCHANGE NO. 999. CABLE ADDRESS—"ARCO AKRON."

GENERAL SALES AGENTS:

JOHN H. GRAHAM & CO., 113 Chambers and 95 Reade Sts., New York.
P. O. Box 1042. Cable Address, "GRAHAINES."
Cable Codes—Lieber's, A. B. C. 4th Edition, Western Union.

Mention The India Rubber World when you write.

LAMPBLACKS especially for RUBBER MANUFACTURE.
SAMUEL CABOT, BOSTON, MASS

CHLORIDE OF SULPHUR
AND
BISULPHIDE
OF
CARBON
GEO. W.

SPECIALTIES

106 Fulton St. N. Y.

BOUGHT AND SOLD.
I. H. STEEDMAN & CO.,
200 SUMMER ST.,
BOSTON, MASS.

SINGER MACHINE

No. 44-13

THIS is a new machine especially devised for stitching the **Binding on Rubber Dress Shields** for which purpose it has already come into extensive use, and with marked success.

THE SINGER . . .
MANUFACTURING CO.

561-563 Broadway, New York.

1210 Chestnut St., Philadelphia.

260-262 Fifth Ave., Chicago.

128-132 Essex St., Boston.

SALESROOMS IN EVERY CITY.

Mention The India Rubber World when you write.



BEST IN THE MARKET

Cable's Carriage Cloth

New Factory Buildings.

Prompt Shipments.

New Machinery.

Samples Freely Furnished.

CABLE RUBBER COMPANY,

70-72 ESSEX STREET, BOSTON, MASS., U. S. A.

Mention The India Rubber World when you write.

RECLAIMED RUBBER

Mechanical and Chemical.

DANVERSPORT RUBBER COMPANY,

Office, 239-241 A St., Boston, Mass.

Mills, DANVERSPORT, Mass.

W. J. CORBETT, Pres't. and Treas.

J. C. WALTON, Secretary.

Address all communications to Boston office.

Mention The India Rubber World when you write.



Published on the 1st of each Month by

THE INDIA RUBBER PUBLISHING CO.

No. 150 NASSAU ST., NEW YORK.

HENRY C. PEARSON,
EDITOR.HAWTHORNE HILL,
ASSOCIATE.

Vol. 26.

AUGUST 1, 1902.

No. 5.

SUBSCRIPTIONS: \$3.00 per year, \$1.75 for six months, postpaid, for the United States and Canada. Foreign countries, same price. Special Rates for Clubs of five, ten or more subscribers.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank draft, Post Office Order or Express Money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Post order, payable as above.

DISCONTINUANCES: Yearly orders for subscriptions and advertising are regarded as permanent, and after the first twelve months they will be discontinued only at the request of the subscriber or advertiser. Bills are rendered promptly at the beginning of each period, and thereby our patrons have due notice of continuance.

COPYRIGHT, 1902, BY

THE INDIA RUBBER PUBLISHING CO.

Entered at New York Post Office as mail matter of the second-class.

TABLE OF CONTENTS.

	PAGE.
Editorial:	
The Proper Extraction of Latex	341
Rubber Goods Growing Better	341
Governments and Cable Making	342
Regulation of the Trusts	342
The Coming World's Fair at St. Louis	343
Giving It a Name	343
Minor Editorial	344
Working "Para Rubber" in the Amazon Valley	345
[A Page of Illustrations.]	
The India-Rubber Trade in Great Britain	346
[State of Trade. A Middleman's Dilemma. A Deficiency in our Manufacture. Cable Company Notes. Precipitated Sulphur. Artificial Rubber. Sundry Notes.]	
The Latex Bearing Ducts of the Rubber Tree	348
[With Illustrations.] Henri Lecomte	
Rubber Factory Equipment and Processes	350
[The Cutting of Rubber Coated Fabrics. Three Roll Washers and Grinders. Vulcanizing Rubber Shoes Under Pressure. Miniature Vacuum Drying Chambers for the Laboratory. With Six Illustrations.]	
Crude Rubber and Planting Interests	352
[Castilloa Elastica Rubber Dried in the Sun. Rubber in the Malay States. Rubber at the Trinidad Botanic Garden. Rubber Exploiting in Peru. Planting Manicoba Rubber in Sergipe. New York Trading and Development Co. Other Mexican Rubber Planting Companies. Methods of Rubber Planting.]	
Rubber Industry in the [United States] Census	354
New Goods and Specialties in Rubber (Illustrated)	355
[Stoughton Golf Ball. A Popular Toy. The "Comfort" Heel Cushion. A New Bed Sore Cushion. Rubber Carriage Sponges. "Universal" Blue Print Wringer. The "Simplex" Hygienic Nipple. "The Little Minister." The Silk Rubber Sun Bonnet.]	
The Editor's Book Table	356
Recent Rubber Patents [American and English]	357
The United States Pacific Cable	359
[With Portrait of John W. Mackay.]	
Midsummer Outing of The New England Rubber Club	360
[With Five Illustrations.]	
Affairs in the Amazon Rubber Country	362
Letters to the Editor	363
[German Prices of Rubber Scrap. The Colonial Rubber Co. (Europe.) Rubber Egg Shells a Joke.]	
Some Wants of The Rubber Trade	364
New Trade Publications	364
India-Rubber Goods in Commerce	365
Miscellaneous:	
The "Pacific Rubber Co." Gets Tired	369
The Ambition of Mr. Converse	364
"Dermatine" and its Uses	364
The Ohio Rubber Plantation	370
Rubber Notes from Europe	365
News of The American Rubber Trade	366
[With Portrait of Ernest E. Buckleton.]	
The Rubber Trade at Akron	369
Review of the Crude Rubber Market	370

THE PROPER EXTRACTION OF LATEX.

A PROPOS of planting rubber, it goes without saying that vigorous growth of the trees is essential and an abundance of latex desirable. But these conditions might exist without profit to the owner. The great essential is that the latex be extracted without injury to the trees, at an economical cost, and be converted properly into rubber. It is by no means certain, if all the rubber trees now under cultivation should suddenly reach a productive stage, that the planters would be prepared to deal with the chief problem involved. Perhaps all the time that must elapse before the maturity of the recently formed plantations will not be too long for the study of the physiology of the rubber yielding species, and particularly in relation to the latex ducts and the conditions most favorable for emptying these.

On another page appears an interesting contribution to this study, by an eminent French botanist, M. Lecomte. One feature of this paper to which special attention may be directed is the suggestion that indiscriminate or reckless scarring of the trees, in order to obtain a present yield, is liable to break the connection between the latex ducts—not very close at best—and thus interfere with any future yield. Not much argument will be needed to impress this idea upon the mind of one who knows anything about rubber trees, but what method can be adopted that will minimize the unavoidable wounding of the bark in the extraction of rubber, say from such species as the *Castilleja elastica*?

RUBBER GOODS GROWING BETTER.

THE fact that rubber manufacturers use a variety of compounding ingredients in the production of their merchandise is now pretty generally known by the public at large. It is also universally misunderstood, the general belief being that compounding is nothing more or less than cheapening. Even those who are large buyers and are in close touch with the trade, who visit the factories and have ample opportunity for investigation, are prone to the same sort of error. For example, a well known builder of automobiles, holding forth before an interested audience at an "auto" club not long since, stated that the average tire contained not more than 10 per cent. of rubber with 90 per cent. of fabric and "mud." Certain of the listeners thought the statement extreme, but none appreciated the fact that the automobile tire would be built wholly of pure rubber to-day if it would wear better; that the efforts of the manufacturers are not directed toward cheapening, but toward durability and elasticity.

That intelligent compounding is in the interest of the user is proved by the exhaustive tests that prominent electricians have made of all types of insulated wire, where it was proved over and over again that compounded stocks were far superior to pure rubber, lasting longer and insulating better. The same is true regarding belting, packing, hose; indeed, all but the soft rubber goods, that demand a high degree of elasticity, and that alone.

When the science of compounding was in its infancy

pure gum was used very generally, and often with disastrous results. Later, when manufacturers came to know how great a variety of ingredients could be incorporated in rubber, it sometimes happened that the batch was "crowded" with adulterant to the detriment of the goods. Such a course hurt the business at large to a degree, but individual brands far more, and that soon corrected itself.

At the present time it is easily susceptible of proof that the average vulcanized rubber product contains a larger percentage of rubber than twenty years ago; in fact, to add more, would in many cases cause dissatisfaction on the part of the buyer. This sounds like an extreme statement and would be scoffed at by the ignorant, but it is nevertheless true. Take the rubber shoe compounds, for example. Years ago they contained plastic, white lead, and barytes, in addition to the ingredients used to-day, together with an amount of lampblack that was absurd. To-day the manufacturers have evolved a simpler, more practical, less loaded compound, and the product is far better.

Then, too, instead of moving heaven and earth for new earthy materials or metallic oxides, manufacturers have come to use reclaimed rubber in their places, and further have learned the value of African rubbers and many low grade gums that a few years ago found no market. All of these are rubber or rubber like, and in many cases take the place of dry adulterants, and at the same time add a definite quantity of Caoutchouc to the mass.

GOVERNMENTS AND CABLE MAKING.

DURING the recent discussion at Washington of Pacific cable projects the assertion was made repeatedly that "there is no company in the United States with experience in making and laying deep sea cables," and this was urged against every suggestion toward the construction of a cable with American capital, by American labor, and under American control. At one time or another a like assertion could have been made regarding every branch of manufacture that has since been developed in United States. Not so many years ago no modern warships had been built here, but when it was determined to create a new navy, there was no hesitancy on account of the fact that experience in such work was lacking in this country. No such argument prevented the signing of the contract for the great New York-Brooklyn suspension bridge, or for the subway transit work now in progress in New York, although the scope of these undertakings was in excess of anything of the kind that had before been attempted anywhere.

It is worth noting that the financial success of the first direct German-American cable, after only a year of working, has led to a determination to lay a duplicate cable. The first cable was not built in Germany, because sufficient facilities did not exist there, but the new cable, already under contract, will be built in that country—a line of 4,142 miles, at a cost of \$5,000,000, which is a large single order for a cable. There is nothing peculiar in the submarine cable industry to prevent the rapid development of facilities for it when a market exists for the prod-

uct. The fact that a German cable factory has so speedily been developed to the point of securing so large an order is due to the sentiment of the people and of the government being favorable, and as a result of this important order the new German cable factory will take a long step forward as a competitor for cable building in general. But in the United States, so long as the benefit of every doubt is given to foreign cable makers, our cable industry can hardly be expected to make such progress as it might in more favorable circumstances—such, for instance, as have been seen in Germany.

THE REGULATION OF TRUSTS.

THE Trusts are to be attacked again. Congressman Littlefield, of Maine, is after them with a sharp new lance, giving out that he has a call to his mission from the administration at Washington. From what can be learned, his campaign contemplates four points of attack: Federal control of all corporations engaged in interstate commerce; power for the government at all times to obtain information as to the doings of such corporations; taxation of corporations having unpaid capital stock; regulation by the government of increase of capital stock.

Until the first point has been gained, the others must wait, and it is likely that several sessions will pass before a congress yet to be elected undertakes to assume control of manufacturing corporations because they happen to be doing business in more than one state at the same time. As for the second point, it follows that when the government has taken control of the corporations it will have power to obtain information; this hardly constitutes a separate ground of attack. The remaining points are very indefinite, since the nominal amount of capital stock of a corporation does not necessarily affect its methods of doing business, and this is where the interest of the public comes in, if at all.

It seems to us that Mr. Littlefield should first prepare the public for the proper appreciation of his campaign by explaining just what he means by a Trust. Then when the fight begins people will know just what are the objects of his attacks, and can better judge of the results. There are a good many people who imagine that all rubber interests whatsoever are controlled by the Rubber Trust, and that prices of rubber goods all over the world are fixed by it. And so with every other important industry. Does Mr. Littlefield belong to this class? If he does it is likely that he will see Trusts where a good many people will not, just as the renowned Don Quixote charged valiantly upon supposed wicked giants, which to other eyes were plain everyday windmills.

Economic development is bound to proceed in the direction which tends to the ultimate greatest good, regardless of legislative enactments. If the best efforts in industrial production are to be attained through consolidations of capital, this tendency can no more be prevented than the procession of the equinoxes; if the contrary is true, there will be a natural return to the old régime, in spite of legislation one way or another. But there have

always been men of the type who offer "salted" mines at a time when money is being invested freely in mines, and the fact that some industrial consolidations may have been formed for the sole benefit of promoters is no reason why the law should be invoked to prevent all consolidations. The law presumes that a citizen will use due caution to avoid, for example, buying a spavined horse; and a like degree of prudence will protect people from parting with their money for shares of unsound companies. And no law in the world can insure the soundness of a manufacturing company or guarantee profits—unless the government should assert not only control of, but responsibility for, every company which offers its shares to the public.

THE COMING WORLD'S FAIR AT ST. LOUIS.

THE extent and character of the work done already in connection with the proposed Louisiana Purchase Exposition, to be held at St. Louis in 1904, indicate that this is to rank among the really notable world's fairs. The "department of publicity" has not been particularly active, but this is just as well, since it will be time enough to begin to get the masses interested when the fair has approached readiness to receive them. But the work which has been done has been of that preliminary kind which relates to planning and organization and securing the co-operation of exhibitors of a class which shall make the exhibition truly representative of the material progress of the country.

A fact which may be of interest to possible exhibitors is that the coming St. Louis world's fair will be, in a much greater degree than any other exhibition ever held in the United States, a government enterprise. In addition to the appropriation of millions in money, the government has appointed a national commission which shall have an important voice in the conduct of the exposition, its approval being required of practically all the important functions of the management. For example, in the matter of awards the rules must be indorsed by the government commission, and the awards made must before issue be confirmed by the commission. The act of congress in relation to the exposition requires that periodical reports shall be made to the president of the United States, showing receipts and disbursements and giving a general summary of the financial condition of the exposition.

There is now assured the financial support necessary for the success of the exposition; a large amount of construction work has been done on the grounds and buildings which, by the way, are to be far more extensive than in any former exhibition, and the energies of the management—composed of men who are able to profit by their experience in former exhibitions, from Chicago down—are being devoted to securing the promise of exhibits from leading concerns in the various departments of industry and art best calculated to illustrate the progress of the period since the United States acquired the great Louisiana territory. But this is not to be merely an American exhibition. All countries are to be invited to be represented, and it appears probable that the recent activity of Ameri-

cans in foreign markets, and the attention which has been directed abroad to the United States as a competitor in international trade, will stimulate foreign manufacturers to exhibit their products side by side with those of this country to an extent that has not been witnessed at any former exposition.

The management are determined to be prepared for the date fixed for the opening, and in order to do this, and in fact in order to know what provision will be necessary, it is requisite that the amount of space required by intending exhibitors shall be known a good while in advance. For this reason, it is urged that every manufacturer who may be a possible exhibitor shall communicate with the management soon with regard to the accommodations likely to be wanted. It may be mentioned that the management proposes to depart from the usual practice of great fairs, and to make no charge for exhibit space, and abolish charges for power, light, and such facilities as may seem reasonably necessary for the best presentation and operation of a desirable exhibit. The idea is that the manufacturer shall be called upon to incur no expense beyond the cost of putting his exhibit together and transportation, and the management hopes to reduce the latter item very materially by special arrangements with the railways.

It is stated that the government thus far has appropriated \$5,000,000 to the general funds of the exhibition, in addition to about \$1,300,000 in connection with the proposed government exhibit and a building to hold it. The director of exhibits is F. J. V. Skiff, who was identified in an important way with the Chicago world's fair and with the United States commission to the Paris Exposition of 1900.

Thomas M. Moore, who was chief of the department of machinery at the Pan-American Exposition, will sustain a like relation to the St. Louis world's fair, and it may be mentioned that in his department—Machinery—provision will be afforded for such India-rubber exhibits as are classified as "mechanical goods." Other lines of rubber products will have equally good provision for their display in other departments of the exposition.

GIVING IT A NAME.

ACCORDING to ancient record, one of the first tasks set for the lusty father of the human race was the selection of original and euphonic names for the representatives of the animal kingdom. Before that time hopeless confusion reigned because none of them knew what they were. A little reflection on this point will make it clear how embarrassing it must have been for a respectable rhinoceros to be in doubt as to whether he were a monkey, a giraffe, or a polecat, or for a bull elephant to suspect that he might be a mouse.

Since that time one of the chief occupations of the descendants of Adam has been that of giving names—countries, states, cities, towns, everything animate and inanimate has demanded a name. Living and dead languages, fiction and fact, all the wide realms of human thought have been called into service in the great and ever increasing demand for names. It is not strange, therefore, that some confusion exists, and that when it

comes to the naming of a new rubber company staid business men knit their brows, and incorporators look blank. An analysis of the names of 150 of the leading American rubber factories develops a similarity of mental process that is interesting, for it shows six groups of names, divided as follows:

Personal (Goodyear, Bourn, etc.).....	60
Geographical (Boston, Chicago, etc.).....	50
Patriotic ("American," "Republic," etc.).....	10
Eulogistic ("Peerless," "Monarch," etc.).....	15
Descriptive (Mechanical, Seamless, etc.).....	15

Thus it is seen that the general judgment, which is quite apt to be right, is in favor of the personal nomenclature. It is in fact as if the founder of a company said: "This is the child of my brain; I am proud enough of it to give it my name, and stand behind it." But the geographical suggestion presses it quite closely, and with reason. With but one rubber mill in a city or town it saves confusion to use that name in incorporating, but the second factory upsets all that. The descriptive name stands next in utility, and no doubt if it were possible would be more largely employed, but the American business man loves not a long signature, no matter what it may mean. The patriotic and eulogistic types have their genesis in the best of motives, but through constant use the significance of the word is entirely lost sight of, and one coined would serve the purpose as well.

It would hardly be fair to thus dissect names that are to-day household words, that stand for progress, fair dealing and success, unless it were to suggest to the new companies yet to come that they might be the pioneers in a more serviceable style of naming. The ideal name will be personal-geographic-descriptive-brief. For example: "The Goodrich, Akron, Vulcanite Co.," or "The Forsyth, Boston, Soft Rubber Co."

THE LATE JOHN WILLIAM MACKAY will be remembered in connection with his work in the extension of submarine cable lines, when the stories of his great fortune acquired as a miner shall have been forgotten. Had he lived as long as the late Sir John Pender—who died at 80—Mr. Mackay might have found himself at the head of a telegraph system as important as that organized by the former. Both men had many qualities in common, and Mr. Mackay distinguished himself by accomplishing work in the new world not less difficult than that done by Pender in an earlier period in the old. He left an Atlantic cable system of over 13,000 miles, an assured Pacific cable line of half this length, and an extensive land telegraph system in the United States, all of which ultimately will form one great bond of communication between Europe and Asia—across two oceans and a continent. Mr. Mackay was not merely an organizer; he worked with his own capital, without any subsidies or privileges from any government, and in most cases against enormous obstacles in the shape of older and strongly entrenched interests.

A GOOD MANY PEOPLE INTERESTED IN RUBBER PLANTING are unnecessarily disturbed by the announcements, which appear about every new moon, of some new "substitute" that is going to "revolutionize the rubber industry," and, as a headline in one Boston newspaper expressed it, render "rubber trees unnecessary." Now no article of commercial utility can be made of pure rubber, and in most products of the rubber factory a very considerable percentage of material other than rubber is required in the "compounds," to produce the best results. The only value that any so called rubber "substitute" ever possessed was as an ingredient for mixing with rubber; the word "substitute," in fact, is a misnomer, for no substance yet

discovered can be used to replace rubber entirely in the manufacture of goods. The increase in the number of useful compounding ingredients has had the effect of lessening the cost of rubber goods without making them less serviceable, with the result of extending the use of such goods, and thereby increasing the demand for crude rubber. The more good rubber substitutes, therefore, the better for the rubber planter. But not every "substitute" so lavishly extolled in advance of a practical test ever comes into use. The less some people know about rubber, the more certain they are that some waste factory product for which no other use can be imagined will make "the best rubber substitute in the world." But the producers of rubber, whether on plantations or in the forest, need not regard artificial rubber as a possibility until they find themselves able to pay for it with artificial gold as good as the native metal.

THE TREATMENT OF THE NATIVES IN THE CONGO, and particularly those employed under Belgian auspices in the collection of India-rubber, has of late occupied the energies of the Aborigines Protection Society, an English organization which, for more than sixty years, has concerned itself with ameliorating the condition of the natives of many lands. Recent numbers of the society's journal, *The Aborigines' Friend*, contain statements in regard to the Congo "horrors" likely to make a manufacturer who has used Congo rubber feel accessory to wholesale murder. But the manufacturer might console himself with the reflection that possibly all rubber from the Congo has not been reddened with native blood, and that his own purchases are from honestly collected lots. But, seriously, the Aborigines society appears to be able to do nothing but listen to addresses which make one's flesh creep, and then issue appeals to the authorities. If they should propose something really practical in the way of remedying the abuses which undoubtedly exist in places, rubber men, as well as other people, might coöperate in making the situation better.

"RUBBER HAS BEEN ENTIRELY SUPPLANTED in the manufacture of hose," says a Philadelphia newspaper. The idea is not that rubber men have become able to make up their hose compounds without rubber, but that metal hose has come into use having "all the flexibility of rubber." The Philadelphia paper not having copyrighted its information, we feel free to use it, for the benefit of several manufacturers who continue to make rubber hose, probably in ignorance that their product has been "supplanted."

THE RUBBER TRUST, according to several veracious newspapers, is at the bottom of the trouble over the Acre concession, in South America. If this be true, it would seem that the Rubber Trust is capable of being stretched around more things than rubber itself.

AUSTRIA NOW HAS A RUBBER JOURNAL—the *Gummi-, Gutta-percha-, Asbest-, und Celluloid-Zeitung*—an interesting little paper lately started at Vienna. Its appearance may be regarded as indicating a growth in the extent and profits of the industries referred to in that country.

?

THE statement appears in *The Brazilian Review*, of Rio de Janeiro, for June 17, that "Mr. Murdoch, manager of the Amazon Telegraph Co., at Manaus, has brought a suit for slander against the editor of THE INDIA RUBBER WORLD."



SMOKING RUBBER WITH PALM NUTS.

This is the method now most generally used. The "pelles" thus made—also called "biscuits" or "hams"—weigh generally 30 or 40 pounds, but sometimes much more.

From "Der Kautschuk und seine Industrie," by Dr. Karl Hassack, Vienna, 1901.



DWELLING OF RUBBER GATHERERS.

Built on poles for protection against the rise which annually takes place in the rivers. Hammocks are covered with mosquito nets—a very necessary precaution.

Photographed for THE INDIA RUBBER WORLD by B. Telles, Manaus.



SMOKING RUBBER WITH PALM NUTS.

The earlier and now little used method of employing a paddle, by which smaller "biscuits" are prepared.

From "Arboretum Amazonicum," by Dr. J. Huber, Pará, 1901.



STOCK OF RUBBER AWAITING SHIPMENT.

A pile of "pelles" made by the process shown in the first illustration on this page.

Photographed for THE INDIA RUBBER WORLD by B. Telles, Manaus.

WORKING "PARA RUBBER" IN THE AMAZON VALLEY.

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

AS a continuation and modification of the remarks tendered under this heading last month, it is by no means an exaggeration to say that things have been very bad indeed, as regards the proofing trade. Some divergence of opinion exists with regard to the cause, though none at all with respect to the effect. It is probable that we shall arrive at the most correct opinion by attributing the slump in business to a concatenation of causes having little or no connection with each other. To enumerate one or two of these, we have the lessened rainfall, the decreased buying power of the public owing to general slackness of trade, and also the increased use of the rainproof garments. The two former causes may be looked upon as temporary and representative of conditions which may easily be reversed; as much, however, cannot be said for the rainproof competition, it becoming more and more evident that the genuine macintosh business has received a severe blow from this source, especially with the better class of customers. The strongest advocate of rubber clothing must perforce admit that where an umbrella is used in conjunction, the advantage both as regards general comfort, hygiene, and lasting capacity lies with the rainproof material, and if prediction is permissible, I certainly think that the macintosh of the future will be largely limited to two classes of wearers, viz.: sportsmen, coachmen, and others who do not carry umbrellas, and the wearers of the dubiously waterproof cheap goods. This opinion is not advanced with any feeling of exultation, but rather in the tone of regret, but there is no use blinking the signs of the times; *præmonitus præmonitus* writ large in the mind's eye is less likely to lead to business losses. Turning for a moment from cause to effect, one rather awkward feature of the slackness in the proofing trade has been the inability to take in the naphtha contracted for. Even if rubber firms had sufficient storage room, they do not care to stock large quantities of such inflammable material, the usual procedure being to have a certain quantity delivered weekly. No doubt some compromise will be arrived at between the tar distillers and the proofers, though, of course, as regards the contracts, the former are in the better legal position. Certainly the month of June saw best solvent naphtha offered at exceptionally low rates, which is at once indicative of a supply being thrown on the market. Despite the improvement that has undoubtedly manifested itself in the mechanical rubber trade there really is very little ground for assuming that a better tone is likely to develop in the macintosh department.

THE relations existing between the rubber manufacturer and the merchant must of a necessity depend for their amicable continuance largely on a feeling of good faith as far as the latter is concerned. The average merchant who buys macintoshes, say for home or export trade, does not know anything about rubber, and he has to rely explicitly upon the word or the guarantee of the rubber firm that they fit and are proper goods for their purpose. Disputes, however, though not at all frequent, do arise, and it is then that the technical ignorance of the merchant is apt to become painfully clear. It suggests itself as advisable that firms dealing with large quantities of waterproofs should acquaint themselves to some extent with the manufacture, or else make a business arrangement with some expert to make a

rough examination in cases where large quantities of goods are being shipped abroad. There have been cases where, owing to some oversight in the manufacture, goods which were supposed to be perfectly vulcanized, and as to which a guarantee had been given, have been shipped to cold climates and given the utmost dissatisfaction. This, of course, means loss of reputation to those retailing the goods, a loss which is by no means necessarily rectified by the settlement of claims. A merchant who had suffered a loss in this way said it would be far too expensive a matter to have the goods tested before despatch, but I think he exaggerates here, and it must be remembered that there is a wide difference in the charge made for isolated analyses and for testing work later in quantity or by contract. Anyhow, whatever course of procedure may be adopted, it certainly seems that the merchant would be well-advised to dissipate to some extent the Egyptian gloom which surrounds his knowledge of the technology of water-proofing, even if only to enable him to put leading questions when entering into contracts. With regard to the important question of guarantees as to withstanding extremes of temperature, it certainly may be safe enough to give such for a good rubber proofing, but in the case of some of the recovered rubber proofs which have been fashionable of late, considerable caution should be exercised, both as to giving and receiving them if litigation is to be avoided.

WITH regard to the rubber sponge, success seems to have provokingly eluded the grasp of those who have essayed its manufacture. Were the experiments of individual firms considered fit subject matter for discussion here, somewhat melancholy would be the recital of the failures experienced.

Specimens are in existence which look and feel as if they had been subjected to influences similar to those which wrought such disaster in Pompeii. I do not suppose that a sponge of the nature and consistency of pumice stone is at all conformable to the ideas of the merchants, as is likely to lead to the existing demand, as testified to in the May issue of THE INDIA RUBBER WORLD, being satisfied wholly or in part by Great Britain. Of course I don't profess to be in a position to speak as if I were conversant of all that has been done in this branch, and it may be that I am quite in the wrong in assuming that it is not possible at the present time to report any real progress. It will be admitted that results are the most unimpeachable of formulas, and it is to them that we must look for proof that we have got on terms with Russia in this particular branch of the rubber business.

THE news of the collapse of the projected Henley-Callender combine came as a surprise, it being generally thought that the union had been effected. Evidently difficulties of a serious nature must have arisen, though of course their details are not likely to become public unless in a surreptitious manner. It is noteworthy that a prominent reason given by the British Insulated Wire Co. and the Helsby company for their union was "the important combination recently effected in the trade"; of course there is no reason why the London *contretemps* should have any influence upon the prospects of the more northerly combine, the details of which appear to have been amicably settled in a very brief space of time. The Prescott works are, it may

STATE OF
TRADE.A DEFICIENCY
IN OUR
MANUFACTURE.A MIDDLEMAN'S
DILEMMA.CABLE
COMPANY
NOTES.

be mentioned, to be visited by parties of the members of the Society of Chemical Industry on the occasion of the annual meeting at Liverpool in July.—The inquiry recently held by Judge Parry into the certain alleged scandals in connection with the Salford (Manchester) electricity works has resulted as was generally expected in Messrs. W. T. Glover & Co. being exonerated from any imputations cast upon their *bona fides* with regard to the large cable contract which they obtained last year.—Seeing the great increase of electric traction, one would have thought that there would have been plenty of work for the cable, and that close competition would not have arisen. The present competition is, however, very severe, and it must, one would think, lead to a reduction of the substantial dividends which have been paid by the various companies during the last two or three years. There does not, however, seem any possibility of a general combine, and it is rather to be feared that a further cheapening of the rubber on familiar lines will be had recourse to as a way of obtaining business. As regards submarine work, those cable firms engaged therein seem to have been successful in assuring their shareholders that the development of the Marconi system does not necessarily spell immediate ruin to them.

THIS is one of those chemicals which have had a somewhat chequered career in the rubber trade. Known also under the names of Block sulphur and Metallic sulphur, it has long had a limited application for certain purposes. This brand of sulphur is sold either quite pure or containing about 25 per cent. of sulphate of lime, which, however, is not a direct addition but the result of the particular system of manufacture employed. Unless the sulphate of lime quality is sold cheaper than the pure, the rubber manufacturers would certainly seem to be in error in buying it in place of the pure. The special qualities possessed by precipitated sulphur over ordinary flowers of sulphur are neutrality, greater solubility in naphtha, extreme fineness of division, and a decreased tendency to bloom up. The great disadvantage seems to lie in the price, which is considerably higher than the best qualities of flowers, though it should be mentioned that a less proportion can be used. It is understood that Lufbury & Chardonnier, the well known French rubber chemists, have given up the precipitated sulphur manufacture, owing to the small demand, and quite recently The Union Alkali Co., of Soho Works, Manchester, have circularized their customers that they can only continue to supply at an enhanced price. No doubt if large orders were obtainable, the stuff could be supplied at a lower price, but it is not surprising that chemical manufacturers prefer to utilize their space and plant to better advantage. There is no doubt that mistakes have been made by those who have used this sulphur without acquainting themselves with its special properties, and a fear of a repetition of such mistakes has certainly militated against its use. Precipitated sulphur, it may be added, is in general use as a component part of orange sulphide of antimony, it being to its influence that the result of vulcanization by antimony is really due.

I SEE that a presumably serious proposal is on foot to manufacture rubber from banana skins, though the intermediate details are not yet available for comment. However, though I am very sceptical as to the result, I am not in a position to say that it is all humbug. I must say, though, that the proposal bears some similarity to one emanating from London not so long ago. The material in this case was the wild plantain which grows in the West Indies, and a certain individual now employed out there conceived the idea of converting this into rubber. This he averred that he had done

and showed some pieces of undoubtedly genuine rubber to capitalists in London, to whom he confided his anticipations of the wealth to be realized by the adoption of the process on the large scale. His story certainly sounded plausible to those unacquainted with the technology of rubber, but its extreme improbability was easily apparent to the initiated. A suspicious circumstance was found in the fact that the inventor insisted on keeping the details of the process secret, something on the lines of the electric sugar swindle at Liverpool some years ago. On my first introduction to the case, I felt sure that, to put it mildly, the inventor was suffering from hallucination, and that the pieces of undoubtedly genuine rubber he was showing in the City had never had any connection with the wild plantain. When awkward questions were put to him he sought a refuge in the fact that the chemistry of rubber is incompletely known, and that the chemist, expert or otherwise, was quite unable to follow the reactions of his process. The adoption of such a tone was not, however, quite reassuring to the capitalists who were taking the matter up on the strength of the inventor's representations, and the scheme for bringing out a syndicate which had been rather too rapidly drawn up had, perforce, with sighs of disappointment, to be consigned to the waste paper basket. I have referred to this matter at perhaps greater length than necessary, but it is advisable to point out that new things in commerce are always being hawked about the City of London, and that there are plenty of financiers of a sort who will enter into projects willfully blinding their eyes to palpable inaccuracies of statement and fact.

ALTHOUGH the wide field from which the recipients of Coronation honors did not include any representatives of the rubber trade, by reason of their connection with commerce, it is of interest to note that Colonel Richard K. Birley, V. D., of the Seventh Lancashire Artillery Volunteers, a director of Messrs. Charles Macintosh & Co., Limited, received a Companionship of the Bath as a reward for military zeal. The C. B., it may be said, has been very sparingly distributed in the auxiliary forces, and the honor is anything but a barren one—that is as a recognition of merit.—The compulsory order which had been sought to effect the winding up of the Hyde Imperial Rubber Co. was refused at the adjourned hearing at the Stockport county court. The works will go on, therefore, though it cannot be said that an era of prosperity seems to be imminent.—Considerable additions have recently been made to the premises of the Irwell Rubber Co., Limited (Manchester), the business having increased to an extent which necessitated capital expenditure in this direction.—With regard to a statement I made recently concerning the ownership of the Collier motor tire, a slight inaccuracy crept in. The tire is the property of Mr. Baxter, and not jointly that of the Leyland and Birmingham Rubber Co.—Litigation is still proceeding between the Dunlop company and the Clifton Rubber Tyre Co., the owners of the Wapshare tire. The directors of the Clifton company, it may be mentioned, are the directors of the Leyland and Birmingham Rubber Co.—The recent death of Mr. Frank Shaw removes a familiar figure from the ranks of rubber machinists, though the machinery in which he specialized will continue being made at the old address.—I hear that the Dermatine Co., Limited, of Camberwell, London, are experiencing a lively demand for their specialities for hydraulic engineers. It has not unnaturally taken some time for "Dermatine" to show its superiority to leather or rubber for hydraulic purposes, and it is gratifying to be able to testify to the success that has attended the untiring efforts of Mr. John Cooper, the genial managing director.

PRECIPITATED SULPHUR.

SUNDRY NOTES.

ARTIFICIAL RUBBER.

THE LATEX BEARING DUCTS OF THE RUBBER TREE.

By Henri Lecomte.*

THE *latex* of the caoutchouc plants is contained in laticiferous channels, whose distribution varies with the nature of the plant and perhaps also with its biological conditions. It is evident that an exact knowledge of the distribution of the *laticifers* (the *latex* bearing ducts) is indispensable for fixing the regulations of methodical work. Unfortunately, this study has been neglected, so that the processes of extracting the *latex* are altogether empirical. My present intention is not to consider all the cases that may arise, but simply to call attention to certain facts and considerations, which may enlighten experimenters in their researches.

For example in the *Landolphia Heudelotii*, which furnishes the larger part of the caoutchouc exported from the Senegal, the Soudan, and Guinea (in west Africa), it is easy to recognize from a cross section of the *liane* (climbing plant), that the laticifers are especially distributed in the middle portion of the bark, but are almost altogether lacking in the outer portion, as well as in the zone nearest the wood.

To reach the laticifers, there is therefore need of penetrating through the bark. The laticifers of the *Landolphia Heudelotii* are long tubes, ramified and anastomozed, whose diameter varies from 30 to 45 thousandths of a millimeter. These laticifers extend principally along the stem, but, as I have said, they are ramified, and these ramifications take a direction more or less oblique.

A transverse section *a b*, of determined length and depth may, for example, encounter a number of laticifers and produce a proportionate number of orifices from which the latex will flow. A longitudinal incision *c d*, of the same length and depth, will meet a much smaller number.

The inspection of the figure (1) will render further explanation superfluous; but it is not difficult to demonstrate the fact, at least in the case of the *Landolphia Heudelotii*. It is known

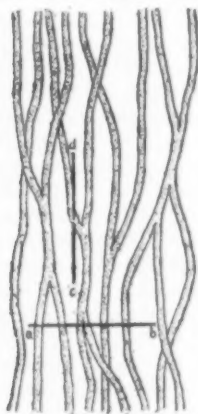


FIG. 1.
Theoretic representation of the arrangement of the laticifers.
a b—Cross section meeting six laticifers.
c d—Longitudinal section meeting only one laticifer.

* Translated from the *Journal d'Agriculture Tropicale* (Paris, April 30, 1902) for THE INDIA RUBBER WORLD. The suggestions contained in this article were presented in a popular lecture on "Caoutchouc and the Plants which Furnish It," delivered by this botanist at Paris, on March 4, under the auspices of the French Association for the Advancement of the Sciences.

—and this is the point of departure of the processes of the extraction of the caoutchouc from dry bark—that the *latex* coagulates spontaneously in the laticifers of the bark when it dries, so that each laticifer of dry bark contains a very thin filament of rubber. If a piece of dry bark is broken, and the two fragments separated carefully, they are seen to be united by a multitude of rubber filaments, the number being equal to that of the laticifers encountered by the section (Fig. 2).

Let this section be made perpendicularly to the length of the stem, or parallel to this length: the filaments are still found in large number if the section is crosswise, but in small number only if it is longitudinal. Fig. 3, drawn from nature, exhibits this clearly. A piece of



FIG. 2.
Two pieces of bark broken apart crosswise, but still connected by a large number of caoutchouc filaments.



FIG. 3.
Illustration exhibiting the caoutchouc filaments connecting two strips of bark.
Between *a* and *b*, the filaments proceeding from the transversal incisions.
Between *a b* on one side and *c* on the other, the filaments correspond to the laticifers encountered by a cross-section.

(45°) produced about twice as much as the vertical incisions.

The transverse incisions have another advantage with reference to the gathering of the *latex*. In consequence of the constant growth of the ligneous cylinder surrounded by the bark, the latter, not following this growth, is stretched more and more, like a too narrow garment, around too voluminous a body. It is this tension of the bark which causes the longitudinal cracks, so characteristic, for example, of the surface of the bark of an oak tree. If an annular cross band of bark is removed from the trunk of a tree, and the attempt afterwards made to replace it at the spot from which it was taken, the two extremities will not meet.

It is precisely this tension which causes the flow of the *latex*, which the capillarity would keep, in the absence of this intervention, in the interior of the laticiferous ducts. In making a cross section, the tension of the tissues above and below this section is not modified. The result is that the *latex* will flow as freely as possible. A longitudinal section, somewhat extended, would, on the contrary, produce different results, for

bark of rectangular form was separated in two parts by a perpendicular section along the length of the stem; the two portions were still connected with numerous filaments of rubber. If one of these fragments was afterwards broken in two parts, by a section parallel with the axis of the stem, and the two parts *a* and *b* separated, as shown in Fig. 3, they were seen to be connected by a small number only of thin threads of rubber, because such a section meets a much less number of laticifers than a cross section of the same extent.

We may, therefore, consider it demonstrated that two equal incisions made in the bark will encounter very different numbers of the laticiferous ducts, according as the section is longitudinal (few laticifers), or transverse (many laticifers); it is not difficult to conclude that the cross section will cause a much greater quantity of the *latex* to flow than the longitudinal section. This is very easily shown on living climbing plants belonging to the genus *Landolphia*.

I have also verified the fact on a young *Castilloa elastica*, which was placed at my disposal by Messrs. de Vilmorin. Dr. Morris, in his Cantor lectures, published in the *Journal of the Society of Arts* (London), has stated that in the trees of the genus *Hevea*, cultivated in the Henaratgoda garden in Ceylon, other things being equal, the oblique incisions

the two lips of the wound would tend to separate, and the tension would become feeble.*

As is seen, several causes contribute to render more efficacious the transverse incisions of the bark, with reference to the flow of the latex. But are these sections to be exclusively recommended? That is not my opinion; for the cultivator ought not merely to have the present harvest in view, but the possibility of future harvests. From this viewpoint, the transverse incisions may be disastrous, and the more so as they are the more extended.

Every wound made in a bark produces a scar more or less rapidly by the formation of new tissues, and from this fact the laticifers, at first continuous, are separated into portions, the shorter as the incisions are the nearer. It necessarily results that the future incisions meet only fragments of laticifers, yielding only a small quantity of latex.

In my opinion, and for the reasons mentioned above, it would be suitable, if transverse or oblique incisions are to be made in a shrub or tree, to first make a number of incisions at the same height—say 3 meters from the ground—then to commence afterward a little lower, and so on until the last incisions occur near the ground. Then, on leaving the tree at repose for a sufficiently long period—at least a year—new tissues will be formed in the interior of the bark and in these new tissues prolongations of the original laticifers will penetrate. After this period employed by the tree in producing new tissues, containing laticiferous ducts, incisions can be made again, identical and in the same order.

In no case should completely annular incisions be made. This will prevent the circulation of the sap and compromise the life of the plant. Too wide incisions (distance between the edges of the incisions) should also be avoided; for the healing of the wound is the longer and more difficult in proportion as the edges are further separated from each other.

It will not be difficult to fix upon the plan of a certain number of methodical experiments and observations, which persons living in the tropical regions, and having at disposal rubber trees or plants, might undertake. The results of such an inquiry would be important with reference to the future of the plantations of caoutchouc which of late are coming into existence so generally in all the tropical regions of the globe.

*It is not correct to say, as Bouysson has in the *Revue Generale des Sciences*, that the latex is a kind of ascending sap. I do not think that any proof whatever has been yet presented of the circulation of the latex in the ducts. The fact that the latex flows unequally at the lips of an incision is a direct consequence of the difference of tension of the tissues on the different sides of the incision, and the flowing may naturally be greater at the upper lip of the section than at the lower. This I have verified with the *Landolphia florida* in the hothouses of the Museum. The fact that the incisions made near the ground (*Hevea*) produce more latex than the same at a height of 2 or 3 meters can scarcely be explained except by a difference of tension of the tissues at different heights.

H. L.



FIG. 4.

This view, not presented with M. Leconte's paper, illustrates a prevalent method of cutting the rubber tree (*Castilloa elastica*) in Mexico.

THE "PACIFIC RUBBER CO." GETS TIRED.

WITH the approach of hot weather, the fraudulent "Pacific Rubber Co." seems to have grown tired. The Pacific company has been mentioned in this paper before. First it claimed to have been incorporated in Maryland, but the state officials there denied any knowledge of the fact. Then it announced the purchase of an "established property yielding rubber" in Mexico, though the reputed seller still claims not to have made any transfer. The Pacific company's "long card" was its promise to "pay 360 per cent. in three years." It promised to pay monthly dividends at the rate of 20 per cent. per year, for three years, and then return the par value of the shares, after having first sold them at a discount of 75 per cent. It appears that monthly dividends were paid for awhile, beginning July 5, 1901. THE INDIA RUBBER WORLD at one time pointed out how the company might be able to pay dividends, as follows:—

They will sell as much stock as you want for cash (which they deposit in bank) to the extent of, say..... \$1,000

They can afford to pay monthly dividends at the rate of 20 per cent. per year, for two years, amounting to 400

After which they will have left \$600

—minus cost of advertising, printing, and office administration.

A purchaser of "Pacific Rubber Co." shares informs THE INDIA RUBBER WORLD that he received monthly dividends regularly up to and including March 5, 1902. Getting nothing in April, he began to ask why. The "United Securities Co." (No. 66 Broadway, New York) wrote, April 10:

Owing to the great increase of the number of stockholders, it has been found impractical to send out all the dividends in one day, and as they are constantly increasing in number, the Rubber Company are sending out a circular letter stating fully that the directors have decided to pay the dividends quarterly hereafter, which will mean a saving of a considerable amount of money to them monthly, there being then but four months in the year in which to write up the books, make up the amounts of dividends and mail same, instead of doing this twelve times in the year, which will make a vast saving in clerical work.

After waiting in vain for a quarterly dividend on June 5, this shareholder called at the Broadway office, only to be told that "the treasurer was sick," but that "everything would be all right," after which he received a letter dated June 21, stating:

Our contract with the Pacific Rubber Co. having expired, we have been endeavoring to secure a reappointment as fiscal agents, and as the president of the company is expected here within a short time, we have no doubt the matter will then be satisfactorily arranged, and the question of dividends taken up and attended to. We will keep you fully advised as to this matter.

But information regarding rubber has been a very scarce article at No. 66 Broadway since the date referred to. By the way, the report of R. M. Miner, "treasurer" of the Pacific Rubber Co., to be sent from Mexico to the shareholders, as promised in a circular copied in THE INDIA RUBBER WORLD of January 1, 1902, never reached the persons to whom it was mailed.

To revise somewhat the financial scheme above reproduced from THE INDIA RUBBER WORLD of September 1, 1901, the plan of working appears to have been as follows:

Paid in by a shareholder, say..... \$1,000

Deduct 9 monthly dividends at the rate of 20% a year..... 150

After which the company would have left \$ 850

—minus cost of advertising, printing, and office administration.

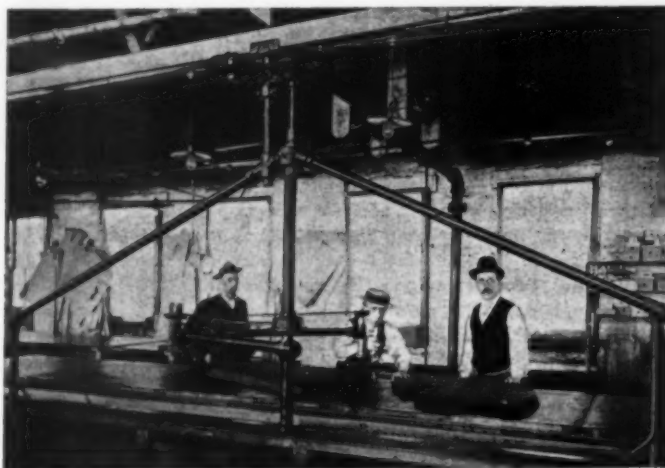
What need had the "Pacific Rubber Co." of the milk from rubber trees in Mexico, or anywhere else, when investors nearer home could be "milked" in this fashion?

RUBBER FACTORY EQUIPMENT AND PROCESSES.

THE CUTTING OF RUBBER-COATED FABRICS.

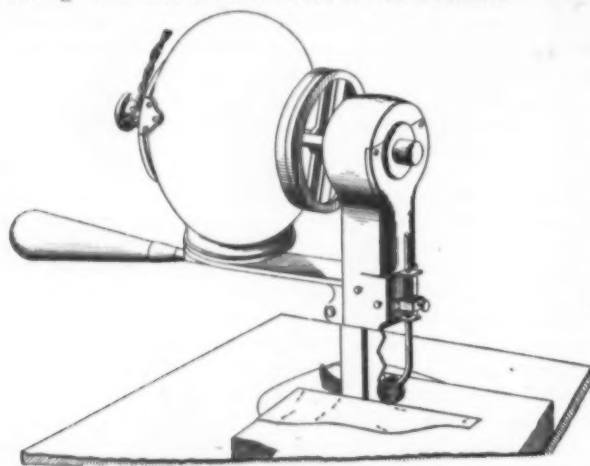
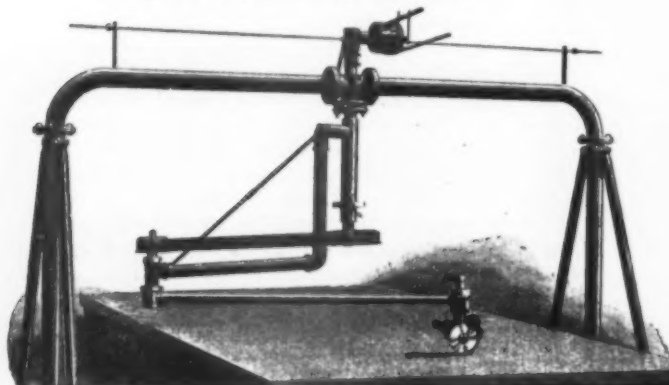
IN the early days of the India-rubber industry the cutting room in factories devoted to the making of rubber clothing was a department that required a great deal of attention, and was also an item of considerable cost in manufacturing, for the cutting was nearly all done by skilled workmen by hand. Suitable patterns were first provided, and then as many thicknesses of rubber coated cloth as could be cut through were handled by the cutter. Many of these cutters by their skill, strength, and ability to keep their knives in good condition, were able to earn large wages. Of course, for small parts that go to make up the garment, dies could be used in connection with the dieing out of the press. When the rubber clothing and mackintosh business, however, came to be a more important factor, various machines, such as are used in the manufacture of ready made clothing, were adapted to meet the wants of the rubber men.

At first this proved to be a difficult problem, for the cutting knife used on cloth alone is not a suitable



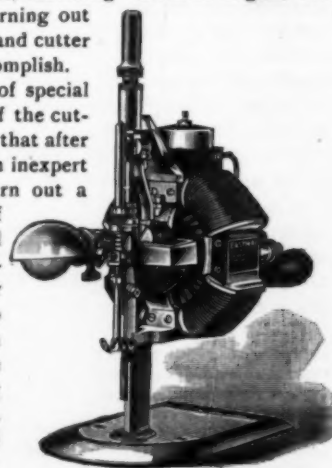
THE NATIONAL CLOTH CUTTER.

Operated by Power or Compressed Air. Reciprocating Knife.

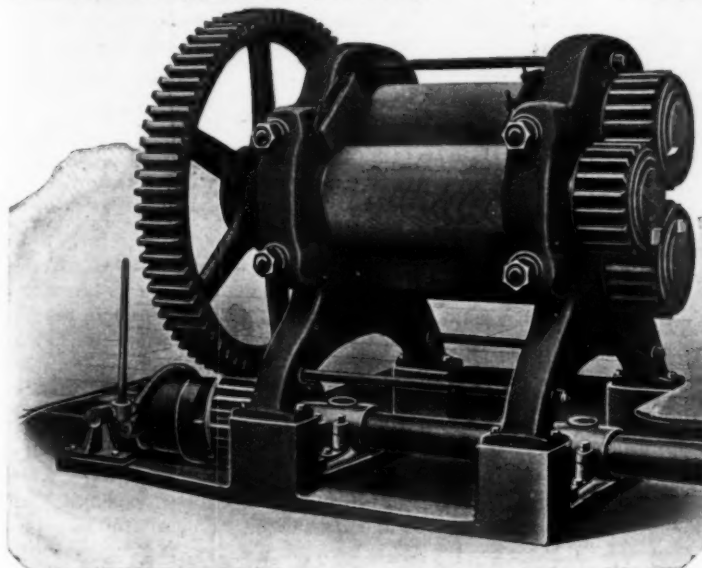
THE BAIRD CLOTH CUTTING MACHINE.
Electrically Operated. Reciprocating Knife.THE FENNO CLOTH CUTTING MACHINE.
Operated by Power. Rotary Knife.

instrument with which to cut both cloth and rubber, nor is the broad presser foot in ordinary use applicable to this sort of work. A curious fact in connection with the solution of this problem is that the companies making the best grades of goods and using the richest compounds, had the greatest trouble in securing a cutting machine that would do the work rapidly and evenly. To-day, however, nearly all the large rubber clothing manufacturers have some sort of a machine for cutting the garments in bulk. There are several types of these machines. For a cutting surface they depend either upon a round knife running at a high rate of speed, and usually fitted with a self sharpening device, or a reciprocating knife or chisel and are operated by power transmitted by belt, or by small electric motor. They are so built that they can be moved to any part of the large table, on which the cloth in many thicknesses is laid, and easily follow the chalked lines left by those who prepare the work. The knives easily cut through plies of three or four inches in thickness, following curves or angles, with perfect accuracy, and turning out infinitely more than the hand cutter can possibly accomplish.

Another point of special value in favor of the cutting machines is that after a little training an inexperienced workman can turn out a great amount of work. The usual manner of preparing the work for the operator is to have it laid out on two tables, the machine being placed between. When one tableful has been completed the workman swings the ma-

EASTMAN CLOTH CUTTING MACHINE.
Operated by Electricity. Reciprocating Knife.

chine over to the opposite side, and by the time he is through with that, the other table is ready for him. The power required to run this machine is, of course, only nominal, as it is only applied to the cutting knife. Certain machines are placed in the trade on a royalty, while others are sold outright. In connection with this article are shown leading types of cloth cutters, operated by power and by electricity.



AN AMERICAN THREE ROLL WASHER.

THREE ROLL WASHERS AND GRINDERS.

MOST of the washing, mixing, and grinding of rubber is done on two-roll mills, upon the same principle as when the rubber industry was in its infancy, although in the United States, to be sure, a greater product has been secured by increasing the size of the rolls and speeding the mills up. It is a curious fact that while the three roll washer is an American invention, the three roll grinder is English. The washer is the invention of Mr. Maurice C. Clark, superintendent of the Joseph Banigan Rubber Co. (Providence, Rhode Island), and is built by both the Farrel Foundry and Machine Co., and the Birmingham Iron Foundry. The comparison of the amount of work done by the three roll washer as against the two roll, is exceedingly interesting. One three roll washer will crack up and wash in a day about 5000 pounds of Pará fine rubber, 4000 pounds of Pará coarse, Caucho, or Assam, and 3500 of low grade Africans, such as thimbles, Benguelas, etc., or would equal the work of five or six ordinary two roll washers, the three roll machine using not over 50 horse power, while the line of two roll washers would use about 150 horse power.

The English three roll double acting mixing and grinding mills were invented and patented by Joseph T. Wicks, the well known India-rubber expert. This type of mill is fitted with one slow and two friction rolls, the manner in which they operate being well shown in the illustration. All three of the rolls are piped for water and steam, and the mill is opened or closed by moving the slow roll backward or forward.

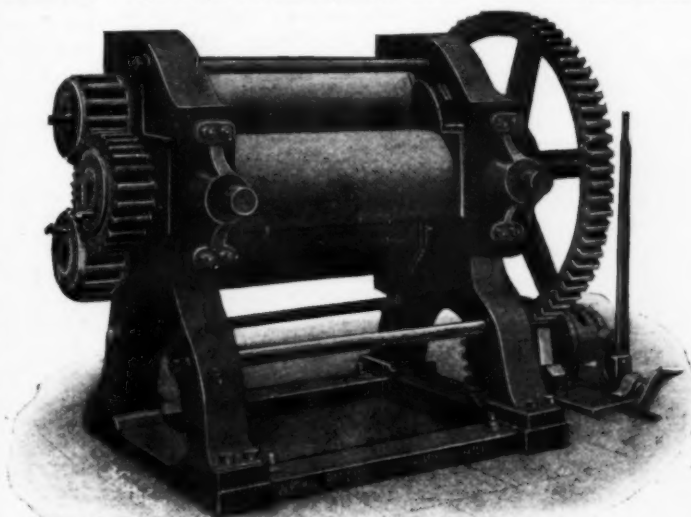
In mixing, the rubber is first placed on the slow roll. The compounds are then used in the usual

manner, and the batch cut and handled just as it would be in ordinary mixing, the difference being that, with two friction rolls, practically twice as much mixing is done in a given time. According to the inventor's figures, a 112 pound batch, which it would take 30 to 40 minutes to fix on an ordinary two roll mill, will be thoroughly mixed in 15 to 20 minutes on a three roll. It has also been found that the rolls can be kept cool more easily on this type of mill than on the two roll. As there are many kinds of stock that should be mixed as quickly as possible, it would seem that this mill might be found very useful. This same three roll system is applied to warming mills, refining mills, and for waste rubber grinders.

It is of interest to know that the inventor and patentee has long been in the rubber business, and is an acknowledged expert. He was at one time connected with William Warne & Co., Tottenham, England; was later manager of the great factories of Charles Macintosh & Co., Manchester; was with Maurel et fils, Boulogne sur Seine, France; and was mill and laboratory manager to the Dunlop Pneumatic Tyre Co., Aston, Birmingham. Mr. Wicks's rubber machinery is built by the old house of James Bertram & Son, Limited, Edinburgh, Scotland.

VULCANIZING RUBBER SHOES UNDER PRESSURE.

FOR some time past ex-Governor A. O. Bourn, of the Bourn Rubber Co. (Providence, Rhode Island), one of the pioneer manufacturers of rubber shoes in the United States, has been conducting a series of experiments with a view to shortening the time of vulcanization where the dry heat is used, and at the same time bettering the product. Instead of the ordinary dry heater he uses a jacketed vulcanizer into which the shoes are run on specially constructed cars. One of the early results of his experiments was the discovery that the time of vulcanization was much shortened when the air in the vulcanizer was compressed. This, however, meant an air compressor and more or less expense. He secured his interior pressure, therefore, by employing a dry vaporizing material which, under heat, liberates a gas that exerts powerful pressure upon the rubber surfaces and at the same time neutralizes the sulphurous and other vapors that have always been more or less a source of trouble



WICKS'S PATENTED THREE ROLL MIXER.

to those who use the ordinary dry heater. Governor Bourn's best results have come from the use of carbonate of ammonium, and he has also used both the bromine and iodide of ammonium. The net result of his experiments proves that the value of the stock is increased about 10 per cent., while the time of curing is cut down about two-thirds. Governor Bourn has patented his process and it is understood that he is soon to use it on quite a large scale.

MINIATURE VACUUM DRYING CHAMBERS FOR THE LABORATORY.

ALMOST all of the leading rubber factories to day have rub-

ber plants in miniature in the laboratory for experimental work. Such companies will be glad to know that it is now possible to secure a small vacuum drying chamber for the drying of rubber, gums, and the various ingredients used in compounding. These dryers are cylindrical, have a door at one end, with three hollow shelves inside through which heated water, oil, or exhaust steam may be circulated as a heating medium. Although the first miniature sample was made only a few days ago, word comes that ten of them have already been placed in rubber mills. [Alex. P. Mende, No. 125 East Sixty-second street, New York.]

CRUDE RUBBER AND PLANTING INTERESTS.

"CASTILLOA ELASTICA" RUBBER DRIED IN THE SUN.

SEÑOR JOAQUIN JIMENEZ, an extensive sugar and coffee planter of Tuxtepec (Oaxaca), Mexico, is interested also in the cultivation of India-rubber, having planted up to date some 10,000 trees, though, perhaps, this number is not now standing. Recently he permitted some of his six and eight year old trees to be tapped by men sent to his place by a Vera Cruz trader, who extracted and cured about 700 pounds of rubber for which they paid 80 cents, Mexican. The trees tapped yielded an average of about one pound per tree. There are on the plantation half a dozen trees, planted fifteen or sixteen years ago, one of which is supposed to have yielded 11 pounds of rubber this season. The rubber here referred to was prepared without the addition of any coagulating agent, the latex having been poured over a coffee patio (drying floor) and dried in the sun.

RUBBER IN THE MALAY STATES.

THE annual report for 1901 of the United Planters' Association of the Federated Malay States again speaks hopefully of the rubber plantations in that region, though without giving any details of later date than have appeared already in THE INDIA RUBBER WORLD. In regard to *Ficus elastica* the report says: "The unsuitability of this tree for planting among coffee to some extent accounts, no doubt, for the preference shown to Pará. Nevertheless, when put out on soil which it likes, growth has been very fine, but it has shown itself to be a tree which will not flourish anywhere and everywhere, and for it to make a vigorous start it appears essential that there should be a fairly rich surface humus or lots of ash after a recent burn. On rain washed and impoverished hillsides it sulks from the day it is planted, but grows splendidly on practically bottomless peat if well drained."

RUBBER AT THE TRINIDAD BOTANIC GARDENS.

IN the annual report for 1901-02 Superintendent John H. Hart writes that the *Castilloa elastica* planted in 1898 is now over 25 feet in height and some of the trees have stems 5 inches in diameter. It has been found that rubber fluids or latex from these young trees produce rubber, but inferior in quality to older trees. Mr. Hart is still of the opinion that trees of this species less than eight or ten years old cannot be depended upon to furnish rubber of good quality. Although chemically rubber is contained in younger plants, yet it is not in such a condition that it can be made of market value. The Pará rubber trees (*Hevea Brasiliensis*) put out in 1898, at the same time as the *Castilloa* trees, fully equal to the latter in height, but have not so large a stem in circumference. They are, however, doing well and promise to thrive in the climate of Trinidad. The Lagos rubber trees (*Funtumia elastica*) made

a splendid growth during the year, some of the trees being now over 20 feet high, with a stem diameter of 4 inches. From present appearances this tree seems to be able to stand more hardship than any other variety under experiment. A section has been planted with Balata (*Mimusopa globosa*), in the first place to make sure of seed supplies of a valuable timber and, secondly, to afford opportunity for illustrating by experiment the age of the tree best suited for producing the Balata of commerce.

RUBBER EXPLOITING IN PERU.

A REPORT by the United States secretary of legation at Lima, Peru, in regard to the formation of two rubber exploiting companies was referred to in THE INDIA RUBBER WORLD of June 1 [page 280.] It has been learned that the company with £26,000 capital, to operate in the province of Sandia, department of Puno, Peru, is the Tambopata Gum Co., organized by Señor Pedro D. Gallagher, of Lima. The new company to take possession of 50,000 acres of rubber lands near Marcapata, in the department of Cuzco, and east of the city of that name, was organized by Don Manuel Elguera, also of Lima, and a brother of the mayor of that city. It was Señor Elguera, by the way, who secured the concession in the Beni country, in Bolivia, now being exploited by The Andes Co., of Baltimore, Maryland.

PLANTING MANICÓBA RUBBER IN SERGIPE.

IN a report on the little state of Sergipe (Brazil), the coast line of which lies between the ports of Pernambuco and Bahia, the United States consul, Mr. Henry W. Furniss, mentions that in 1898 the state appointed a commission to report upon the introduction of the Ceará variety of rubber for cultivation, should it prove advisable. The commission visited Ceará, where the manicóba rubber trees were originally found wild and are now under extensive cultivation, and as a result of their investigation manicóba has been planted in various parts of Sergipe. The consul has seen two plantations, one with about 17,000 trees and the other with more than 20,000, both three years of age and apparently in a flourishing condition. Manicóba is grown from seed, planted at the commencement of the rainy season, 12 to 15 feet apart, usually three seeds to a hill, the most vigorous resulting plant being left to stand. Some planters file one end of the hard seed—which much resembles the seed of the castor bean—to assist germination; others soak the seeds before planting, but generally the seed is planted without previous preparation. It is said that the plant will grow on rundown sugar lands. It is cultivated on the sandy soils of Ceará, but it doubtless will succeed best on good farming land. The tree requires little attention, in many places the soil receiving no cultivation, and reaches a height of from

12 to 36 feet in four to six years. It yields rubber at a very early age, the average stated at about 2½ years from planting, when from 7 to 35 ounces of rubber may be obtained in a season. Rubber is obtained by removing from the trunk a V-shaped piece of bark, to the lower angle of which a small vessel is placed to collect the latex. Coagulation is assisted by smoking, as in the case of Pará rubber, though the latex will coagulate spontaneously in the air. The cost of planting and gathering the initial crop is stated to be less than in the case of coffee, sugar, or cotton, while the profit is greater, and the consul believes that the new industry will become important.

NEW YORK TRADING AND DEVELOPMENT CO.

INCORPORATED under New Jersey laws, with \$100,000 capital. Conrad C. Hewitt is president, and James Westervelt, a lawyer at No. 51 Wall street, New York, secretary. The company report the possession of 5000 acres of land in Vera Cruz, Mexico, of which one tract of 1000 acres is to be taken by the New York Teachers' Plantation Co., mentioned recently in this paper, and another is to be taken by the Empire State Plantation Co., said to be composed of about forty New York business men. The company offer other tracts to companies formed for planting rubber, coffee, and cacao, agreeing to accept stock of such companies in payment for the land, and offering to contract to develop the plantation. The company have issued a pamphlet entitled "Rubber, Coffee, and Dividends."

THE WILLIAM V. BACKUS CO.

INCORPORATED June 25, under New Jersey laws; capital, \$250,000, all paid in. Objects, planting rubber, vanilla, tobacco, bananas, and other tropical products; the charter also gives them the right to deal in plantation lands and promote plantation companies. Officers: William Vernon Backus, president; William Backus, Sr., vice president; A. B. Nichols, secretary; M. K. Mullin, treasurer. The office in New Jersey is that of The Corporation Trust Co., No. 15 Exchange place, Jersey City. The principal office is in the Society for Savings building, Cleveland, Ohio, which is also the headquarters for two other Mexican development companies, planned, among other things, to cultivate rubber, and of both of which Mr. Backus is also president—The Mexican Investment and Manufacturing Co. and The Imperial Plantation Co. These, by the way, have been mentioned already in THE INDIA RUBBER WORLD.

TEHAUNTEPEC RUBBER CULTURE CO.

[Plantation "Rubio," Coatzacoalcas, canton of Manatitlan, state of Vera Cruz, Mexico. Offices: No. 35 Nassau street, New York.]

THE first annual report of this company, relating to its operations to June 1, 1902, the end of its first fiscal year, states that practically all the company's 2500 gold mortgage bonds have been subscribed for, with the realization of sufficient funds to carry on all the development work that has been planned. Most of the subscribers have elected to carry the life insurance connected with the investment, and the death is reported of three of the subscribers during the year, together with the details of the settlement of their life insurance claims. The plantation manager reports nursery stock in readiness and plans completed for bringing up the area planted in rubber trees to 1500 acres this season, closing with the end of August. Employment is given to 400 native laborers, and the report says: "Coupled with our intention to make this plantation the largest and greatest of its kind in the world, we are determined to make the town Rubio a model plantation headquarters," and details are given of the construction of accommodations for the company's employes as well as the construction of roads, bridges, and the like, the progress of which has been most sat-

isfactory, considering the short time since a beginning was made on a virgin forest tract. The report concludes with a letter written by an investor in the company's securities, Mr. Francis A. Crum, of Hartford, Connecticut, after a visit to the plantation, and for the information of his immediate friends, giving some additional details regarding the progress made on this plantation.

LA ZACUALPA RUBBER PLANTATION CO.

[Plantation near Tapachula, state of Chiapas, Mexico. Offices: San Francisco, California.]

THE representation of this company for the Eastern states has been taken by Smith, Kemble & Co., No. 106 Wall street, New York, who have issued a new edition of the several pamphlets descriptive of La Zacualpa plantation and of the methods and prospects for rubber cultivation, including one titled "Rubber; What it is and How it Grows."

ORIZABA RUBBER PLANTATION CO.

[Plantation at El Salto, state of Chiapas, Mexico. Office: No. 215 Dearborn street, Chicago, Illinois.]

INCORPORATED April 11, under the laws of Illinois; capital, \$100,000. The company own 12,354 acres in the department of Palenque, Chiapas, on the Tuliya river, navigable by steamers from the gulf of Mexico, at Frontera, about 120 miles distant. It is intended to develop first one half of this tract, for which purpose 6177 plantation certificates are offered for sale, each to represent one acre of ground, which the company agrees to clear, plant, and bring to full cultivation. The principal interest of the company will be rubber planting, though it is intended to plant "side crops" while the rubber is reaching a productive age. In offering these certificates for sale on the installment plan, the company's prospectus refers to the advantage of this form of investment over stock in a building and loan association. The officers are James B. Sanborn, president; Charles C. Emmons, vice president; S. M. Sutherland, treasurer; and E. L. Hagenbuck, secretary—all of whom are connected with important business enterprises in Chicago and neighboring cities.

METHODS OF RUBBER PLANTING.

THE managing director of a rubber plantation company operating in Mexico writes to THE INDIA RUBBER WORLD: "We are planting in the partial shade; a great many planters are planting in open sunlight. My honest opinion is that every one who has planted in open sunlight will get a tree 50 per cent. larger in five or six years than we in the partial shade. On the other hand we will get from 60 to 75 per cent. more rubber from a small tree than they do from a large tree. About three months careful study was made of this proposition; the trees were tapped both in the shade, partial shade, and open sunlight, and the results carefully tabulated by a committee of which I was not a member."

RUBBER PLANTING PUBLICATIONS.

THE Obispo Rubber Plantation Co., New York—(1) Book No. 1 of photographic views. 12 pp. (2) Announcement of offering of \$12,000 of share contracts. 16 pp. (3) Report of C. S. Donaldson, first annual inspector. (4) Consular and Other Reports on Rubber. 25 pp.

The Isthmus Rubber Co., of Ubero, No. 29 Broadway, New York—[Plans, objects and purposes.] 20 pp.

Boston Tropical Co. (Boston, Massachusetts)—Mortgage or Deed of Trust to Manufacturers' Trust Co. 35 pp.

The Hartford Sugar and Rubber Co. of Mexico (Hartford, Connecticut)—Sugar and Rubber. 24 pp.

Isthmus Plantation Association of Mexico, Milwaukee, Wisconsin—(1) Inspector's Report, 1902. 30 pp. (2) Information Bulletin No. 14. 6 pp.

RUBBER INDUSTRY IN THE CENSUS.

CENSUS Bulletins Nos. 158, 159, and 163, issued from Washington, are devoted respectively to manufactures in Massachusetts, New York, and Pennsylvania, for the period covered by the census—the year ending June 30, 1900. From these bulletins has been compiled the following details regarding the rubber industry in the three states named, to correspond with similar information for certain other states reported in THE INDIA RUBBER WORLD of December 1, 1901, and May 1, 1902.

MASSACHUSETTS.				
	Rubber Boots and Shoes.	Rubber Hose and Belting.	Rubber and Elastic Goods.	TOTAL.
Number of establishments....	6	4	70	80
Total capital.....	\$13,157,321	\$1,566,475	\$11,818,650	\$26,542,446
Land.....	\$377,473	\$100,300	\$529,998	\$1,007,771
Buildings.....	\$1,082,001	\$166,500	\$1,139,512	\$2,388,015
Machinery.....	\$98,462	\$115,177	\$2,075,338	\$3,341,177
Cash and Sundries.....	\$10,799,383	\$64,498	\$8,041,604	\$19,805,485
Salaried officers and clerks....	153	66	351	570
Salaries.....	\$220,320	\$70,523	\$512,359	\$803,233
Average number wage earners..	5,250	316	5,944	11,510
Men.....	2,921	286	3,281	6,488
Women.....	2,279	31	2,536	4,859
Children under 16.....	57	9	127	193
Total wages.....	\$2,456,305	\$175,161	\$2,401,954	\$5,033,420
Miscellaneous expenses.....	\$1,081,132	\$23,238	\$652,939	\$1,757,309
Rent of works.....	—	\$2,050	\$5,340	\$7,390
Taxes.....	\$127,566	\$6,195	\$105,319	\$239,080
Rent of offices, interest, etc.	\$953,566	\$14,993	\$516,080	\$1,484,539
Contract work.....	—	—	\$5,300	\$5,300
Cost of materials.....	\$3,837,688	\$594,459	\$3,554,422	\$7,986,569
*Principal materials.....	\$3,752,489	\$597,413	\$3,398,337	\$7,758,239
Fuel and rent of power.....	\$85,199	\$7,046	\$156,085	\$248,337
Value of products.....	\$16,490,015	\$936,421	\$13,885,059	\$31,311,495
[* Including mill supplies and freight.]				

NEW YORK.			
	THE CITY.	THE STATE.	
Number of establishments.....	50	55	
Total capital.....	\$3,378,258	\$4,114,297	
Land.....	\$154,923	\$176,009	
Buildings.....	\$240,341	\$304,077	
Machinery.....	\$644,979	\$723,679	
Cash and Sundries.....	\$938,009	\$809,639	
Salaried officers and clerks.....	192	214	
Salaries.....	\$252,601	\$312,234	
Average number of wage earners.....	1,871	2,103	
Men.....	844	1,009	
Women.....	987	1,059	
Children under 16.....	40	42	
Total wages.....	\$739,368	\$832,113	
Miscellaneous expenses.....	\$270,751	\$317,510	
Rent of works.....	\$10,120	\$13,897	
Taxes.....	\$174,475	\$217,605	
Rent of offices, interest, etc.....	\$13,720	\$17,720	
Contract work.....			
Cost of materials.....	\$2,506,126	\$2,997,636	
*Principal materials.....	\$2,358,562	\$2,939,563	
Fuel and rent of power.....	\$147,564	\$58,073	
Value of products.....	\$4,663,440	\$5,303,824	
[* Including mill supplies and freight.]			

PENNSYLVANIA.		
Number of establishments.....	.....	11
Total capital.....	.....	\$924,106
Land.....	.....	\$22,700
Buildings.....	.....	\$92,919
Machinery.....	.....	\$275,721
Cash and sundries.....	.....	\$315,766
Salaried officers and clerks.....	.....	30
Salaries.....	.....	\$43,836
Average number of wage earners.....	.....	599
Men.....	.....	439
Women.....	.....	124
Children under 16.....	.....	43
Total wages.....	.....	\$275,699
Miscellaneous expenses.....	.....	\$31,590
Rent of works.....	.....	\$1,863
Taxes.....	.....	\$1,456
Rent of offices, interest, etc.....	.....	\$28,551
Contract work.....	.....	\$120
Cost of materials.....	.....	\$740,976
*Principal materials.....	.....	\$732,107
Fuel and rent of power.....	.....	\$8,869
Value of products.....	.....	\$1,170,889
[*Including mill supplies and freight.]		

In the case of Massachusetts the rubber establishments are classed under three headings, as will appear in the accompanying table. In New York the whole industry is considered under the classification "Rubber and elastic goods." It may be mentioned that one rubber belt and hose factory is not included in

the New York figures. Some readers may not be prepared to learn that 50 rubber establishments are credited to New York city and 55 to the state as a whole.

In spite of the great progress made in the rubber industry in other states, Massachusetts has retained first rank in the rubber industry, which would seem proper, since the industry had its beginning in that state. During ten years past, the growth of production in Massachusetts has been very marked, the increase in the value of rubber and elastic goods since 1890 being 63 per cent. and in rubber boots and shoes 68 per cent.

From the bulletin for Massachusetts it appears that in 1890 there were in that state 50 establishments devoted to rubber and elastic goods, producing goods valued at \$8,518,612; 5 rubber boot and shoe factories, making goods of the value of \$9,792,024; with no separate enumeration for "rubber belting and hose." The total for 1890, therefore, was 55 establishments, with an output of \$18,310,636 worth of goods. Reference to the table for 1900 will show what an enormous growth has been made.

The Pennsylvania figures relate to "Rubber and elastic goods," and do not embrace two rubber boot and shoe factories and one rubber belting and hose factory.

In the figures which follow are summed up the total production of rubber goods in the leading states in 1900, so far as the census bulletins have given any information:

RHODE ISLAND.		
Rubber Boots and Shoes.....	\$8,034,417	
Rubber and Elastic Goods.....	2,518,268	\$10,552,685
CONNECTICUT.		
Rubber Boots and Shoes.....	\$11,999,038	
Rubber and Elastic Goods.....	8,246,240	20,245,278
OHIO.		
Rubber and Elastic Goods.....		7,330,104
NEW JERSEY.		
Rubber Belting and Hose.....	2,800,145	
Rubber and Elastic Goods.....	8,458,274	11,258,419
MASSACHUSETTS.		
Rubber Boots and Shoes.....	16,490,015	
Rubber Belting and Hose.....	936,421	
Rubber and Elastic Goods.....	13,885,059	31,311,495
NEW YORK.		
Rubber and Elastic Goods.....		5,303,824
PENNSYLVANIA.		
Rubber and Elastic Goods.....		1,170,889
Additional Rubber Boots and Shoes in various states, according to Census Bulletin No. 171.....		
		4,566,349
Total.....		\$91,739,023

There remain to be considered the returns of the rubber industry in New Hampshire, Indiana, Illinois, Wisconsin, Delaware, and California, involving a production of sufficient value without doubt to bring the total for the United States during the census year to upwards of \$100,000,000.

THE AMBITION OF MR. CONVERSE.—In an address before the Middle States Jobbers' Association, in New York, some time ago, Colonel Samuel P. Colt, president of the United States Rubber Co., said that the ambition of Mr. E. S. Converse, in the early days of the Boston Rubber Shoe Co., was to live to see the time when the daily production of his factory might reach 1000 pairs a day. The production has grown to 55,000 pairs a day, and with an aggregate invested capital of \$350,000, the company has divided among the shareholders, under Mr. Converse's management, \$29,000,000.

NEW GOODS AND SPECIALTIES IN RUBBER.

THE STOUGHTON GOLF BALL.

THE new Stoughton ball seems to be in many respects radically different from the ordinary ball, and is winning many friends among both professionals and expert amateurs. The manufacturers claim for it that it is made of pure Gutta-percha throughout, the gum being very

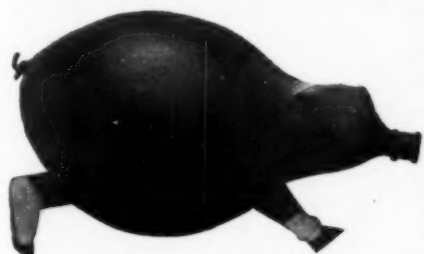


carefully refined by a new and elaborate process that removes all traces of resin. The ball on being cut open shows a dense gum, varying in color from a light tan to a slaty white. Thirty days of seasoning ages it sufficiently for any player, and

after that length of time it does not seem to harden at all. The makers claim for it that it flies as far and as truly as any ball on the market. It also putts with great sureness, keeps its shape, does not hack, and the paint adheres to it excellently. The only trouble that the manufacturers have at present, is that they are not able to fill their orders as rapidly as they come in. [The Stoughton Rubber Co., Stoughton, Massachusetts.]

A POPULAR TOY.

THE whistling pig shown in the accompanying illustration is



a grotesquely funny toy and one that is having a very large sale. It is made of pure rubber, similar to toy balloon stock, and when inflated is as rotund as a prize porker,

As the air escapes in a prolonged whistle the creature shrinks and expires with a pathetic wail. [Baumann Rubber Co., New Haven, Connecticut.]

THE "COMFORT" HEEL CUSHION.

THIS is a springy cushion of "sponge rubber," protected by a flexible aluminum shield, cloth, and kid skin. It is worn inside the shoe, leather side up. Before placing it in position, the piece of leather or felt usually found in the heel is removed.



It is then only necessary to moisten the glue on the bottom of the cushion, and press firmly on the cushion to make it adhere to the sole. The

cushion is easily removed when the shoes are repaired or worn out, and can be used again. These cushions are offered as giving the same service in preventing jar in walking as rubber heels, with greater convenience in application. They retail at

30 cents. They are covered by a patent issued May 6, 1902, to Frank P. Macintyre. [The "Comfort" Heel Cushion Co., No. 153 North Third street, Philadelphia.]

A NEW BED SORE CUSHION.

AN article which is often of very great utility in the sick room, whether at home or in a hospital, has been brought out in a new form, which is shown in the accompanying illustration. It is similar in general design to an invalid ring, except that it is oblong, having two holes, and thus affording a surface on which the patient can rest, while the openings protect the sore from coming in contact with the bed. The medium size is 17 inches long and 10 inches wide. A patent has been applied for. [Tyer Rubber Co., Andover, Massachusetts.]



RUBBER CARRIAGE SPONGES.

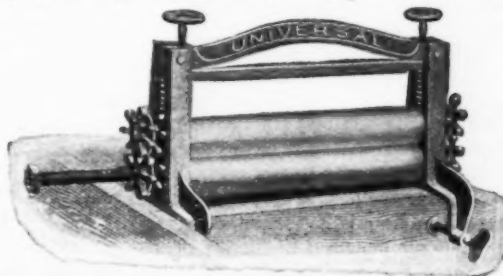
THE ordinary sponge is very largely used for washing fine carriages, but is open to many objections. Chief among these is the unavoidable presence of sand taken in while it is growing, and the fine grit which the flabby texture of the sponge allows to penetrate its walls while in use, thus proving a secondary cause of scratching. Beyond this, there is the short life of the sponge



under such severe work as the washing of rigid surfaces. It is, therefore, interesting to note that an ideal carriage sponge is now made of rubber. It is fully as soft as the softest natural product, the cell walls are more resilient and do not catch sand or grit, while one of these sponges will also outlast many of the natural ones. [Alfred H. Smith, No. 84 Chambers street, New York.]

"UNIVERSAL" BLUE PRINT WRINGER.

THIS is a wringer made on a new design, and intended especially for use in the manufacture of blue prints and in leather



book, and paper work. It is fitted for use also in hosiery mills and dye houses, and for medallion picture mounting. It has steel spiral pressure springs, and the rolls can be reversed in order to allow a crank to be placed at either end of the ma-

chine. This wringer is made in six sizes, with rolls from 12x2 1/4 inches to 30x3 inches, with special sizes to order. [The American Wringer Co., No. 99 Chambers street, New York.]

THE "SIMPLEX" HYGIENIC NIPPLE.

A DISTINCTIVE feature of this new article, on which a patent has been applied for in the United States, is its construction in such a manner that every part of the interior is plainly visible and readily cleaned, there being no ribs, corrugations, bulb, or sharp angles to catch and hold the milk. The "Simplex" hygienic nipple can be easily turned inside out, if desired—a consideration of great importance in connection with the health of infants. It is put up for the trade in a new style handsome paper box, containing one dozen; black, per gross, \$5.25. [Whitall Tatum Co., Nos. 46 48 Barclay street, New York.]



"THE LITTLE MINISTER."

CREATING a popular toy is much like originating a proverb

—apparently easy, but in truth often difficult. The "Little Minister" has hit the popular fancy and may be seen almost everywhere. Just what it is in the solemn manikin that appeals to the children it is difficult to say. It can hardly be the dainty boots, the creased trousers, nor the tasteful tie. Indeed, as clothes do not make the man, neither does dress make the minister. It must lie, therefore, in some virtue patent to the clear eye of the child, but hidden from the misty vision of the elders, for certain it is that the little ones are all wild over the "Little Minister," as he is done in rubber by The B. F. Goodrich Co. (Akron, Ohio.)



THE SILK RUBBER SUN BONNET.

THE silk rubber sun bonnet is the newest, most favored bathing cap creation, says a fashion writer,

in this summer's bathing outfits at the seaside. It covers the hair, and protects the eyes at the same time. It is made of silk lined with rubber and has a wide visor in the front. At the back, after the hair is carefully tucked up in the cap, the fullness of the material is drawn close to the head by a draw string. The sun bonnet is tied under the chin with ribbons or tapes. These new sun bonnet bathing caps can be bought in a variety of silks, rubber lined. Some silk bathing caps are in Oriental colors and designs; others are made of checked or plaid silk, and then again the cap is made to order to match the suit with which it is to be worn. The old-time rubber caps

are shown in a number of new shapes, and this year some are exactly like a big Tam o' Shanter and have a silk pomomp at the top. There are other silk caps which have exactly the effect of a handkerchief tied about the head. Then they can be bought with a rubber brim, stiffened a trifle at the edge and also with a soft fluted brim cut in scallops. Still another style of head covering is a combination rubber cap and handkerchief. The cap successfully protects the hair, and the handkerchief then covers it, the ends tying in a fetching knot in front. This little cap and handkerchief in one is a great convenience to the girl who goes in for sea bathing.

THE EDITOR'S BOOK TABLE.

FOREIGN TRADE REQUIREMENTS. PUBLISHED ANNUALLY WITH Quarterly Supplements. 1902. Containing Complete Information Concerning the Commercial Countries of the World, as to Trade Conditions, Traveling Salesmen, Agencies and Advertising, Credit Customs; Commercial, Trade Mark, and Patent Laws; Transportation Facilities, Principal Cities, Postal Regulations, Coins and Currencies, Weights and Measures, and Cable Rates. New York: Lewis, Scribner & Co. [Cloth. 4to. Pp. 332. Price, \$15.]

THE intending exporter of goods in any line is concerned to know where he can sell his wares, how to reach the market, what restrictions are imposed on the admission of goods abroad, what protection he will be afforded under the laws of foreign countries, and what class of people may be expected to buy what he has to offer. To cover all these various points is by no means a simple matter, particularly in the case of one who undertakes for the first time to engage in foreign trade. In this case the attempt has been made to bring together in a single reference volume the information most essential to the successful conduct and extension of foreign trade. The information contained apparently has been compiled with great care to assure its accuracy and bring it up to date. It has been classified and arranged under a number of headings which are suggested in the full title of the book, as given above.

In the first place, 147 large pages are devoted to a general description of the various countries, in alphabetical order, giving a brief account of the political conditions and the character of the employments and the manner of life of the people and the classes and grades of goods which they consume, and particularly foreign goods. As illustrating the miscellaneous information given, we quote from the pages on Japan:

Rubber specialties, mechanical rubber goods, and rubber cloth in sheets are now manufactured in Tokio, a factory having been established during the past year. This list, however, is active in the markets and will continue a good one for the American manufacturers of such articles. Rubber covered wire has been made for several years but is suitable for currents of low potential only. Considerable effort is being made by the Japanese to improve this product.

Elsewhere it is mentioned that electric motors are largely used to drive machinery in factories, the use of electric lighting is spreading, and the preference is given to American electrical apparatus. And so on, throughout the pages of this section.

The laws of the various countries applying to traveling salesmen, agencies and the like; usages in general practice as to credits and discounts; the laws relating to contracts, bankruptcy, collections, etc.; the patent and trade mark laws, and various other matters important to be understood by exporters are outlined here, in each case by an expert. A section is devoted to transportation facilities. Taking one country after another, the shipping lines by which it is reached from the United States are mentioned, with the names and addresses of agents, together with the means of internal transportation.

There are tables of coins and currencies, postal regulations, and ten pages of foreign weights and measures, with the United States equivalents. It is shown, for example, that the picul of China, Japan, Borneo, Java, Siam, and the Philippines

all differ. The arroba differs in 23 countries, and there are 21 different quintals, varying from 100 pounds, in British Honduras, to 220.46 pounds, where the metric system prevails. The book concludes with a gazetteer of the commercial cities of the world having a population of 10,000 or over, giving location, population, banks, chambers of commerce, and principal industries.

In view of the fact that some classes of the information contained in this book are liable to frequent change, the publishers announce that four supplements, covering such changes, will be supplied during the year to each purchaser of the annual volume.

THE STATUTORY AND CASE LAW APPLICABLE TO PRIVATE COMPANIES under the General Corporation Act of New Jersey, and Corporation Precedents. By James B. Dill, Counselor at Law. Third edition. New York: Baker, Voorhis & Co. 1901. [Cloth. 8 vo. Pp. 381. Price, \$5.]

SINCE it has been the announced and settled policy of the state of New Jersey to attract incorporated capital to that state, by the enactment of liberal laws for the protection of capital thus invested, the large corporations formed under the laws of that state have become more numerous than in any other part of the Union. The result of such legislation is apparent from the fact that several other states have adopted many of the essential and underlying principles, some even adopting the language, of the New Jersey laws. In this volume has been compiled the legislation of New Jersey in relation to corporations, including the latest amendments, with ample explanatory notes and abstracts of legal decisions in which the various enactments have been construed by the courts. There are given also many forms and precedents, such as are likely to be of use to counsel in the organization of corporations under the laws of other states as well as in formation and subsequent management of New Jersey companies. The recognized position of the author of this book as perhaps the most eminent corporation counsel in the United States fits him particularly for the preparation of such a work.

L'AGRICULTURE SUR LA COTE EST DE MADAGASCAR. PAR E: Prudhomme, directeur de l'Agriculture a Madagascar. Paris: Comité de Madagascar, 1901. [Paper. 8vo. Pp. 120+8 maps and 87 plates.]

THIS brochure in the series of "Publications du Comité de Madagascar" relates to explorations made in eastern Madagascar by the author, and his observations regarding Caoutchouc, cacao, vanilla and coffee. To the first named he devotes 30 pages and several plates, reporting the discovery of new rubber species of commercial value.

WE have received from the International Cable Directory Co. (No. 17 State street, New York) a copy of the International Cable Directory of the World, issued in conjunction with the Western Union telegraphic code system. This book to users of the wires, both for domestic or cabling purposes, is to the business public what the telephone book is to users of the telephone, as it furnishes the cable addresses of prominent corporations, firms, and individuals in all parts of the globe, and is therefore invaluable for reference. The fact that the State department has purchased copies to supply all the embassies, legations, and consulates of the United States, must add materially to the value of the book to users of the Code. The book was adopted by the State department mainly for the promotion of commercial relations with the United States by residents of other countries. The great success of the work has induced the publishers to print the business headings in German, French, and Spanish, in addition to English. The Directory contains perhaps the best classified list of American manufacturers extant.

RECENT RUBBER PATENTS.

THE UNITED STATES PATENT RECORD.

ISSUED JUNE 3, 1902.

- NO. 701,279. Vehicle wheel and tire. Louis F. Altpeter and Robert C. Altpeter, Chicago, Illinois.
 701,342. Process for making rubber tires. Albert T. Holt, Springfield, Ohio.
 701,434. Vehicle tire. George A. Wiedely, Indianapolis, Indiana, assignor to the G & J Tire Co., Indianapolis, Ind.
 701,472. Apparatus for covering flexible conduits with rubber in cement or liquid form. John T. Dickey, Hoboken, New Jersey.
 701,558. Tire for vehicle wheels. Charles J. Gilling, Chicago, Illinois.
 701,617. Golf ball. Francis H. Richards, Hartford, Connecticut, assignor to the Kempshall Manufacturing Co.
 701,736. Golf balls. Eleazer Kempshall, Boston, Massachusetts, assignor to the Kempshall Manufacturing Co.
 701,737. Golf ball. Same.
 701,738. Golf ball. Same.
 701,739. Golf ball. Same.
 701,740. Golf ball. Same.
 701,741. Golf ball. Same.
 701,765. Golf ball. Francis H. Richards, Hartford, Connecticut, assignor to the Kempshall Manufacturing Co.
 701,766. Golf ball. Same.
 701,807. Rubber tread horseshoe. Harrison C. Frost, Akron, Ohio, assignor to the Goodyear Tire and Rubber Co.

ISSUED JUNE 10, 1902.

- 702,162. Method of forming sponge substitutes. Alexander Straus, New York city.
 702,187. Box for fountain syringes. Antone C. Eggers, New York city, assignor to the Goodyear's India Rubber Glove Manufacturing Co.
 702,256. Waterproof coat. Gustave A. Strom and Albert Strom, Paris, France.
 702,271. Elastic tire. William F. Williams, London, England.

ISSUED JUNE 17, 1902.

- 702,394. Rubber dam holder. Edmund M. Beall, St. Louis, Missouri.
 702,398. Supporting device. Eva M. Bowyer, Chicago, Illinois.
 702,432. Vehicle tire. William S. Huffman, Boston, Massachusetts.
 702,539. Vehicle tire. Frederick K. Christensen, Sandy, Utah.
 702,678. Composition from rubber-like gum and preparation of same. William Prampolini, San Luis Potosi, Mexico.
 702,738. Flexible hose adapted for couplings, etc. Marshall Montgomery, Philadelphia, Pennsylvania.
 702,759. Water bag. Tony L. Allegritti, Chicago, Illinois.
 702,799. Playing ball. Eleazer Kempshall, Boston, Massachusetts, assignor to the Kempshall Manufacturing Co.
 702,869. Air tube for pneumatic tires. Arthur T. Collier, St. Albans, England, assignor of one-half to Edgar Oliver Goss and Arnold Elworthy Williams, London.

ISSUED JUNE 24, 1902.

- 702,937. Stopper for gas mains. John Franklin, Norwood, Ohio.
 702,942. Ball. Robert K. Gray, London, England.
 703,000. Golf ball. Francis H. Richards, Hartford, Connecticut, assignor to the Kempshall Manufacturing Co.
 703,103. Syringe nozzle. Henry E. Weber, Canton, Ohio.
 703,107. Syringe nozzle. Charles S. Wood, Chicago, Illinois.
 703,123. Horseshoe. John Dillon, New York city.
 703,156. Artificial foot. Matthew Smith, Liverpool, England, assignor of one-half to Edward Henry Walker, Bootle, Lancaster, England.
 703,196. Insulated wire. John A. Heany, Philadelphia, Pennsylvania, assignor to the Teter-Heany Developing Co., Philadelphia, and a corporation of West Virginia.
 703,197. Manufacture of insulated wire. Same.
 703,229. Rubber tip attachment for lead pencils. Claes W. Boman, New York city, assignor to Eagle Pencil Co.
 703,239. Golf ball. Cleland Davis, U. S. Navy.
 703,351. Warming bag. Terence O'Donnell, Kansas City, Missouri.

Trade Marks.

- 38,499. Dress shields. The Canfield Rubber Co., Bridgeport, Connecticut.
 38,500. Dress shields. The Canfield Rubber Co., Bridgeport, Connecticut.

THE ENGLISH PATENT RECORD.

[* Denotes Applications from the United States.]

APPLICATIONS—1902.

- 9,760. Collapsible bathing tub. Klara Baer, 39, Hillcrest road, Acton, London. April 28.
 9,804. Process and apparatus for molding and welding together articles made of India-rubber. Emile Bert, 22, Southampton buildings, Chancery lane, London. April 28.
 9,805. Methods and apparatus for manufacturing pneumatic tire covers and inner tubes. *Same*. April 28.
 9,855. Tires for vehicle wheels. Jean Libaud, 111, Hatton garden, London. April 29.
 9,915. Hose fittings. Joseph Walker, Augusta Works, Regents parade, Birmingham. April 30.
 9,972. Screw nuts for safety bolts of pneumatic tires. Edouard Etieune Michelin, 24, Southampton buildings, Chancery lane, London. April 30.
 9,997. Detachable rubber heels for boats and shoes. John Miles, Leicester. May 1.
 10,054. Pneumatic leg guard. Herbert Byron Jeffery, 9, Regent street, London. May 1.
 10,106. Rubber pencil tips and erasers. John Alexander George Ross, Newcastle-on Tyne. May 2.
 10,113. Machine for making rubber mats. Cyril Manning, Manchester. May 2.
 10,349. Twin balloon. Alfred Julius Boulton, 111, Hatton garden, London. [La Société Anonyme pour le Commerce et l'Industrie du Caoutchouc, Belgium.] May 5.
 10,397. Pneumatic tires. Edward Louis Curbishley, 18, Southampton buildings, Chancery lane, London. May 6.
 10,398. Wheel tires. Harry Barnard, Hamilton, Ontario. May 6.
 *10,453. Golf balls. Eleazer Kempshall, 19, Holborn viaduct, London. (September 28, 1901, date of application in United States.) May 6.
 10,488. Lionel Lyons, Birmingham. Pneumatic or other tires. May 7.
 10,489. Protective device for tires of cycles, and similar vehicles. Jesse Rigg and Ernest Haigh, Manchester. May 7.
 10,513. Teething pads. Frederick William Ingram, 23, Southampton buildings, Chancery lane, London. May 7.
 10,704. Improvements in golf balls. Eleazer Kempshall, 19, Holborn viaduct, London. (Date of application in United States, March 24, 1902.) May 9.
 10,709. Overcoat or waterproof for cyclists. Robert Henry Marsh and Aquascutum, Limited, 52, Chancery lane, London. May 9.
 10,771. Pneumatic tires. Jonathan Aldouse Mays, 75, Chancery lane, London. May 10.
 10,791. Protecting devices for pneumatic and other elastic tires. Herman Fussen, 70, Chancery lane, London. May 10.
 10,864. Device for preventing skidding and side slipping on pneumatic or other tires. Edwin Midgley, 173, Fleet street, London. May 12.
 10,893. Valves for pneumatic tires. Albert Henry Sayles, 118, Fenchurch street, London. May 12.
 *Improvements in atomizers. Henry H. Harris, Southampton buildings, Chancery lane, London. [Rhodes Lockwood, United States.] May 13.
 11,009. Pneumatic tires. Frederick Westwood 50, Alcester road, Birmingham. May 14.
 11,070. New material or composition for soles and heels of boots and shoes, horse shoe pads, stair treads and mats; also carriage tires and the like. Robert Terras Gavin and John Stuart Campbell, 4, Furnival street, Holborn, London. May 14.
 11,116. Process of making gums from liquid hydrocarbons. William Malcolm Binnie and Orazio Lugo, 99, Balham Park road, London. May 15.
 11,118. Blind teats or baby comforters. Frank Potter Bunton and Percy Tom Bunton, Hull. May 15.
 11,143. Protective coverings of pneumatic tires. Thomas James Bowler, Haileybury College, Hertfordshire. May 15, 1902.
 11,158. Pneumatic tires. John Macintosh, Woolhampton, Berks. May 15.

- 11,283. Covers for pneumatic tires. Hilaire Binet, Birkbeck Bank chambers, Southampton buildings, Chancery lane, London. May 16.
 *11,319. Playing balls. Eleazer Kempshall, 19, Holborn Viaduct, London. (Date of application in the United States, April 15, 1902.) May 16.
 *11,321. Vehicle tires. William Scott Huffman, 18, Buckingham street, Strand, London. May 16.
 11,383. Plain cushion India rubber tire dismountable for carriage wheels. Alfred Ducasble, Asnières (Seine), France. May 17.
 11,385. Device for removing foreign substances from the surface of rubber tires. George Waters Pitt, 9, Warwick court, Gray's Inn, London. May 17.
 11,436. Golf and other like balls. William Harvey Smith, Bradford. May 20.
 11,469. Pneumatic tires. John Macintosh Macintosh, Woolhampton, Berks. May 20.
 11,477. Pneumatic toy. Robert Lindsey, 43 Southampton buildings, Chancery lane, London. May 20.
 *11,505. Collapsible tubes and other tubular articles. Benjamin Joseph Barnard Mills, 23, Southampton buildings, Chancery lane, London. [Transparent Cellulose Products Co., United States.] May 20.
 *11,507. Playing balls. Eleazer Kempshall, 45, Southampton buildings, Chancery lane, London. May 20.
 11,520. Flexible tubing and the manufacture thereof. William Mathwin Angus, 70, Chancery lane, London. May 20.
 *11,605. Playing balls. Francis Henry Richards, 19, Holborn viaduct, London. May 21.
 *11,606. Playing balls. *Same*. May 21.
 *11,607. Playing balls. *Same*. May 21.
 11,631. Rubber and eraser tips and blocks, with and without holders, pencils, and the like. May 22.
 11,640. Elastic cushions or buffers for electric light shades. May 22.
 11,659. Appliance for locating punctures in pneumatic tires. Frederick William Johnson, 23, Coleman street, London. May 22.
 *11,752. Golf balls. Eleazer Kempshall, 19, Holborn viaduct, London. (Date of application in United States, March 25, 1902.) May 23.
 *11,753. Golf balls. *Same*. (Date of application in United States, March 12, 1902.) May 23.
 *11,754. Playing balls. *Same*. (Date of application in United States, March 28, 1902.) May 23.
 *11,755. Golf balls. *Same*. (Date of application in United States, April 8, 1902.) May 23.
 *11,801. Golf balls. Robert Hutchison, Glasgow. May 24.
 11,857. Pneumatic and cushion tires, or outer covers. Max Polack, 111, Hatton garden, London. May 24.

PATENTS GRANTED.—1902.

[Complete specifications have been printed of the following patents, since our last report, the numbers and dates given relating to the original applications, noted already in THE INDIA RUBBER WORLD.]

504. Pneumatic tires. Harris, H. B., 11, The Grange, Liscard, Cheshire, and Velland, R., 47, Durning road, Liverpool, Lancashire. January 8, 1901.
 650. Air tubes for pneumatic tires. Beattie, J., Belfast, Ireland. January 10, 1901.
 775. Pneumatic tires. Lins, R., 6, Kanonierstrasse, Berlin. January 11, 1901.
 836. Molds for producing tobacco pouches, tire covers, etc. Byrne, F. A., and Boardman, G., Birmingham. January 12, 1901.
 895. Elastic vehicle wheel tires, other than pneumatic. Niedzielski, B. von, and Gnatowski, J. von, Warsaw, Poland. January 14, 1901.
 1,157. Manufacture of rubber hose, tubing, and the like. Heyl-Dia, G. E., Manchester. January 17, 1901.
 1,158. Instrument for administering medicaments,—as in the urethra. Levy, A., Hagenu, Alsace. January 17, 1901.
 2,067. Elastic hosiery. Haywood, J. H., Nottingham. January 30, 1901.
 1,160. Waterproof fabrics. Bousfield, J. E., 4, South street, Finsbury, London. January 17, 1901.
 1,229. Rubber tire protector. Levy, A. M., Soljanka, Moscow, Russia. January 18, 1901.
 *1,362. Hoof pads. Kent, W. J., No. 99 Garfield place, Brooklyn, New York, United States. January 21, 1901.
 2,155. Solid or hollow rubber tires. Williams, W. F., 17, Great Pulteney street, Golden square, London. January 31, 1901.
 2,196. Exercising apparatus. Ryan, M. B., Erftrasse, 12, Cologne, Germany. January 31, 1901.

THE UNITED STATES PACIFIC CABLE.

THE announcement was made on July 19 that the Commercial Pacific Cable Co. had signed a contract with the Telegraph Construction and Maintenance Co., Limited (London), for the manufacture and laying of its cable from Honolulu to Manila, touching midway at Guam. The Construction company guarantees to complete the cable by June, 1903, if furnished with the necessary soundings. In the event that these cannot be furnished, the company agrees to finish the cable laying within such time thereafter as may be necessary to take the soundings.

It is stated that the Commercial Pacific Cable Co. have laid before the government at Washington a proposal that if the soundings in the Pacific ocean taken by the United States boat *Nero* are thrown open to that company for use in laying their cable, the company will agree to have the entire cable from San Francisco to Manila laid and in operation by June 1, 1903, or $1\frac{1}{2}$ years sooner than the company had at any time before indicated that they could put the cable into operation. The government is considered likely to throw open the soundings to the public, including the cable company named, just as it has always thrown open to the public all government soundings taken along the coast of the United States or elsewhere.

The placing of this contract would indicate that the Commercial Cable interests are not bound up with any particular cable manufacturer. The three transatlantic cables of the Commercial Cable Co. were laid by Siemens Brothers & Co., Limited, and the first section of the Pacific cable has been made by the Silvertown company. The Telegraph Construction and Maintenance Co. were identified with the first successful Atlantic cable, having been formed, in fact, in April, 1864, at the suggestion of the late Sir John Pender, by the amalgamation of the leading cable makers of that time, to construct a transatlantic cable, since which time they have occupied a position among the greatest cable laying companies. The company have a capital of £448,200 (= \$2,241,000) on which amount dividends of 20 per cent. were paid last year, in addition to 4 per cent. on £150,000 of debentures.

In connection with the recent debate in Congress on the question of extending government support in the construction of a Pacific cable, a cablegram addressed to the chairman of a congressional committee was read on June 11, of which the following is a copy:

HERRBURN, Chairman, Washington:

My company begs to inform you that it has already manufactured 1065 nautical miles of submarine cable which we are to lay between San Francisco and Honolulu for the Commercial Pacific Cable Co., and the balance is being made at the rate of 25 miles per day, and our steamer *Silvertown* will sail with said cable on or about the 1st August next.

ROBERT K. GRAY,
Managing Director of the India-Rubber,
Gutta-Percha and Telegraph Works Co.

DEATH OF JOHN W. MACKAY.

JOHN WILLIAM MACKAY, of San Francisco and New York, and president of the Commercial Cable Co. and of the Com-

mercial Pacific Cable Co., died in London on July 20. His last illness was of short duration, as earlier in the week he had been engaged with Vice President Ward, of the same companies, in concluding a contract for the completion of the Pacific cable, the announcement of which appeared the day before Mr. Mackay's death. Mr. Mackay was born in Dublin, Ireland, November 28, 1831, and was brought by his family to New York nine years later. He was a very young man when he found his way to California, where his attention was attracted to mining interests, and he became one of four partners to gain great wealth through the discovery of the "Bonanza" silver mine. Mr. Mackay, by the way, was the last survivor of the group. He became interested in the subject of ocean telegraphy at a time when all the Atlantic cables were controlled by a monopoly, and in conjunction with Mr. Bennett, of the New York *Herald*, established the Commercial Cable Co., which company now operates three transatlantic lines besides having a working arrangement with the German-Atlantic cable. The Postal Telegraph Co., with 185,000 miles of land wires in the United States, is an allied enterprise. Mr. Mackay was the principal stockholder in the various companies named, and it is

presumed that his place in these companies will be taken ultimately by his son, Clarence H. Mackay, already a vice president of the Commercial Co. The latter is credited, in a recent newspaper article, with having been the first to suggest the Pacific cable enterprise now under way. The construction of the Pacific cable will be in charge of George Gray Ward, long identified with the Mackay interests, and regarded as the leading expert on ocean cable laying now living.



THE LATE JOHN W. MACKAY.

BRITISH PACIFIC CABLE.

THE Telegraph Construction and Maintenance Co.'s cable steamer, *Colonia*, sailed from London on July 10 for Vancouver, to lay the longest section of the British Pacific cable, from British Columbia to Fanning island, and another steamer was to sail in a few days to lay the section from Fanning island to the Fiji islands. With these two sections the cable will be completed. The date named in the contract for completing the laying of the cable is November 1, 1902.

ANOTHER GERMAN ATLANTIC CABLE.

THE Deutsch-Atlantische Telegraphen-Gesellschaft have contracted for a new cable across the Atlantic, to duplicate the line laid in 1900 from Borkum, Germany, to New York. The total length of this line is 4142 miles, in two sections, uniting at Horta, in the Azores. The company's recent experiments in cabling direct from Borkum to New York have been quite successful, affording practically one cable. The year 1901 was the record year in the transatlantic cable business, and the annual report of the German cable company for the first year makes a most satisfactory showing. The cable will cost 21,000,000 marks (= \$4,998,000) and will be manufactured in Germany. Mr. Franz Clouth, the Cologne rubber manufacturer, is a director in the company owning and operating the German Atlantic cable, besides being connected with the company which will make the new cable. The government will pay an annual subsidy of 1,710,000 marks (= \$406,980) for forty years.



MID-SUMMER OUTING OF THE NEW ENGLAND RUBBER CLUB.

"RAIN or shine" was the watchword of the members of the New England Rubber Club on the afternoon of July 22, as they wended their way toward the magnificent estate owned by the Country Club in Brookline, near Boston. Nobody believed that it would rain, yet all of them carried umbrellas. So optimistic were they, however, that the spiders' webs on the grass and the low flying swallows were cited as proofs that it could not rain that afternoon—nor did it. The excursionists came from all over New England, and centered at a pretty little pagoda like house at Heath street, in Brookline, from which they were speedily transferred to tally-hos and barges, and in a brief seven minutes drew up before the old colonial mansion which is the home of the Country Club. As each carriage appeared, Towne's orchestra, on one of the broad verandas, struck up the most inspiring music, in earnest of the good time that was in prospect. To digress a moment, the Country Club, which was thrown open to the New England Rubber Club through the kindness of Mr. Arthur W. Stedman, a prominent member in both organizations, is the pioneer organization of its kind in the United States. It is rich, exclusive, and progressive, has model tennis and squash courts, golf links, bowling greens, and race track, together with equipment for indoor games, such as ping pong, pool, and the like. It has every modern convenience, including a magnificent dining hall, and a corps of waiters that are unexcelled, all under the direct charge of Superin-

tendent George H. Kelton, a well known Harvard man and a famous athlete.

The feature of the afternoon was the golf tournament, for which the most careful arrangements had been made in the way of fair handicaps, pairing of players, and the presence of plenty of caddies. Incidentally, rubber manufacturers generously came to the assistance of the Sports committee and donated golf balls, enough for double the number of players, for there were presented, three dozen "Forsyth," three dozen "Stoughton," and five dozen "Haskell" balls. The following gentlemen entered the golf tournament, their handicaps being—

NINE HOLE MEDAL PLAY HANDICAP GOLF TOURNAMENT.

Members.			Hand. Gross Net			Hand. Gross Net		
R. E. Paine...	0	46	46	F. B. Rickaby.....	6	45	39	
F. D. Balderston...	0	49	49	Harold W. French..	8	58	50	
F. H. Jones.....	0	45	45	E. E. Wadbrook....	10	72	62	
A. O. Bourn, Jr....	0	60	60	John E. Page.....	10	52	42	
W. E. Barker.....	2	50	48	W. J. Kelley.....	12	52	40	
W. J. Swazey.....	2	43	41	J. H. Stedman.....	12	62	50	
W. L. Pitcher.....	2	58	56					
A. H. Brown.....	2	51	49	<i>Visitors.</i>				
S. Lewis Gillette...	4	56	52	E. H. Litch.....	53			
C. A. Morss, Jr....	6	56	50	A. L. Aldrich.....	49			
William Keyes.....	6	52	46	Newton Crane.....	52			
O. A. Barnard.....	6	52	46	W. H. Palmer.....	75			

For those who did not play golf there were other games. For example, Messrs. John J. McGill, O. A. Barnard, E. Bliss, and George Barrett elected to exercise themselves at the old



CLUB HOUSE OF THE COUNTRY CLUB AT BROOKLINE.

fashioned game of bowls, the umpire being Mr. Patterson. As might be expected, the Canadian member, Mr. McGill, proved himself to know more about the game than any of the others, and won, the score being 30. While the bowling was at its height two baseball nines were organized, W. E. Parker being the captain of one which was known as the "Big Bluffs," while F. D. Balderston was captain of the "Little Bluffs," with James L. Garvin for umpire. The following were the players:

"BIG BLUFFS."

Capen, catcher,
Barker, pitcher,
Greene, first base,
Barnes, second base,
Barrett, third base,
Barnard, short stop,
Miller, left field,
Austen, center field,
Palmer, right field.

"LITTLE BLUFFS."

Allen, catcher,
Balderston, pitcher,
Pearson, first base,
Stevens, second base,
Williams, third base,
Smith, short stop,
Paine, left field,
Tingley, center field,
Brown, right field.

Three innings were played, the score being 2 to 2. The game was full of interesting plays and marvelous decisions, and characterized by a series of failures to catch high flies and to hit low balls, that convulsed the on lookers.

While the ball game was in progress the Boston *Herald* sent a very courteous representative, Mr. R. F. Hall, with a special photographer, who desired to get a likeness of the officers of the Club. None of the directors were to be found, but the rest of the active officers grouped themselves on the steps of the clubhouse,

and, sustained by encouraging and admiring comments of a jolly crowd, passed safely through the ordeal. A little later, golfers, ball players, bowlers, and all who could be quickly gathered, arranged themselves on a knoll and a very good picture of the majority of those present was secured by Photographer Chickering. About 5.30 the showers that had been promised came, and the Dinner committee were saved the trouble of rounding up the scattered members for the evening's banquet. The dinner was one of the best that the Club has yet had, and embraced the menu presented on this page.

The tables were very tastefully decorated, the orchestra playing familiar selections while the Club dined, and the members joining heartily in singing many of the popular favorites. After the cigars and coffee, the president, Governor A. O. Bourn, called the feasters to order and displayed the golf prizes, which had been placed on the table just in front of him. These were four very beautiful black oak steins trimmed with solid silver, made by "the Tiffany of Boston," N. G. Ward & Sons—three of them being for members of the club and one for visitors. The follow-



FIRST GOLF PRIZE.



SECOND PRIZE.

[Visitors' Prize same as the Second Prize.]



THIRD PRIZE.

MEMBERS OF THE CLUB WHO WERE PRESENT, WITH THEIR GUESTS.

MEMBERS.	GUESTS.	MEMBERS.	GUESTS.	MEMBERS.	GUESTS.
L. D. Apsley	E. W. Cutter	H. W. French	W. H. Chadwick	Henry C. Pearson	Newton Crane
C. B. Allen		W. M. Farwell	Charles F. Baker	George E. B. Putnam	Eli C. W. Bliss
F. H. Appleton		W. H. Gleason	A. L. Aldrich	John S. Patterson	G. B. Barrett
C. B. Archer		S. Lewis Gillett			Lawrence T. Sawyer
A. O. Bourn	A. O. Bourn, Jr.	D. N. Graves	Mr. Kellogg	P. L. Rider	E. H. Litch
A. H. Brown	W. H. Palmer	N. Lincoln Greene		F. B. Rickaby	J. E. Dutton
W. E. Barker	F. L. Smith	E. D. Hewins		W. I. Swasey	J. C. Stedman, M. D.
F. D. Balderston		F. H. Jones		A. W. Stedman	H. S. Mann
O. A. Barnard		William Keyes		W. H. Stiles	J. Jackson Todd
Ira F. Burnham		W. J. Kelly		George Schlosser	R. J. Bowes
W. D. Brackett		W. B. Loughton		Thomas J. Skinner	H. J. Skinner
Charles W. Barnes		J. H. Learned	Max Lowenthal	Alonso P. Spear	Chas. F. Parker
A. L. Comstock		Otto Meyer	Ernest Jacoby	W. F. Stevens	T. S. Lewis
J. S. Capen		John J. McGill		J. H. Stedman	
Isaac Crocker		George H. Mayo		Charles E. Tingley	
Frank T. Carlton		G. S. Miller	R. E. Paine		
W. A. Daggett		Charles A. Morris, Jr.	Wm. H. Loudon	A. D. Warner	
R. D. Evans		W. F. McClintock	J. W. Green, Jr.	George P. Whitmore	R. F. Hall
George P. Eustis	T. A. Forsyth	James E. Odell	H. P. Allen	E. S. Williams	J. L. Garvin
C. F. Edgarton		W. L. Pitcher		J. F. Wheeler	
George W. Forsyth		E. B. Pearson		E. E. Wadbrook	
John H. Flint					

ing were the prize winners in the golf tournament, with their scores:

First Prize—F. B. Rickaby, of the Diamond Rubber Co. (Akron, Ohio); score 45 6-39.

Second Prize—William J. Kelly, of George A. Alden & Co.; score 52-12 40.

Third Prize—W. D. Swasey, of the Enterprise Rubber Co., score, 43-2-41.

Visitors' Cup—R. L. Aldrich, of Cobb, Aldrich & Co. (Boston); score, 49.

After the presentation of the prizes, in response to most enthusiastic calls, the Hon. L. D. Apsley, vice-president of the Club, made a short speech, being followed by Robert D. Evans,

honorary vice-president of the Club. Votes of thanks were then passed to the Country Club, to Arthur W. Stedman, and to the companies who had presented the golf balls. As the members departed, many pleasant things were said of the Sports, Dinner, and Entertainments committees, regarding the exceedingly successful occasion and pleasant time that all had enjoyed. In addition to the individuals named as active in bringing about this outing, those whose work was most evident were W. E. Barker, of the Sports committee, Treasurer George P. Whitmore, and Assistant Secretary W. H. Gleason.

The view of the house of the Country Club on the preceding page is reproduced, by permission, from the July issue of *Munsey's Magazine* (New York.)

AFFAIRS IN THE AMAZON RUBBER COUNTRY.

NO development of importance in regard to the concession for the Acre territory from the Bolivian government to an American syndicate has become known during the past month, beyond the fact that representations have been made to the United States government by the diplomatic representatives of both Bolivia and Brazil. The attitude of the government at Washington is that of refusing to take sides with either country in their controversy. The United States will stand ready, however, to safeguard any interests of American citizens which may become involved. Mention has been made already in these pages of the presence in Bolivia of an exploring party, upon the results of whose work might depend the further action of the Bolivian Syndicate. The botanist of this party is Robert S. Williams, of the New York Botanical Garden, who has sent word from Bolivia that he expects to reach New York in September or October.

* * *

It is not in the nature of things that the vast rubber resources which lie partly in Bolivia and partly in Peru should much longer remain almost undeveloped. It is natural, however, that Brazil, which so long has maintained a practical monopoly of the business of supplying the world with "Pará rubber," should fail to regard with friendly eyes any effort to exploit the resources of regions which might become her rivals in this trade. The attention of the world has been attracted lately by Brazil's strong protest against the carrying out by Bolivia of a contract made with an American citizen with a view to the development of the Acre district. Brazil, by the way, is in a position similarly to thwart every effort which Bolivia may make to utilize her sole existing water outlet to the seaboard—namely, by the Amazon. It has been a part of the plan involved in the Acre concession to improve the means of reaching the Amazon from the principal rubber district in Bolivia, by diverting the trade which now reaches the Amazon only through the badly obstructed Madeira, to rivers which flow into the Amazon without obstruction—by constructing either short canals or railways.

In spite of Brazil, this new rubber district is bound to be reached, in view of the growing demand for its supplies, and that country now appears to be taking steps to use the force of her favorable geographical position to exact a profit from any future output from the Amazon regions beyond her own borders. The United States consul general at Rio de Janeiro, Mr. Eugene Seeger, reports to his government that Dr. Souto Maior, professor of geography in the National University at Rio (who studied for six years in the United States), has secured from the Brazilian government for a period of twenty-five years the exclusive control of navigation on the Madeira from Santo An-

tonio to the Bolivian border, at the mouth of the Béni river with the privilege of levying tolls. Navigation is free on the Amazon, and on its affluent the Madeira up to San Antonio, but from there to the Bolivian frontier—a distance of 222 miles—Dr. Maior has exclusive control. He can levy a tax not only upon every pound of rubber descending the Madeira from Bolivia, but upon all merchandise sent up stream.

The avowed reason for granting this concession is that of providing for the improvement of the Madeira. The section of the river above San Antonio is broken up by cataracts, and a proposition has been revived, based upon an expert report published in 1869, demonstrating that, by constructing a series of locks and small canals, uninterrupted navigation of the river could be established. Dr. Maior has requested Consul General Seeger to call the attention of American engineers and capitalists to this matter with a view to obtaining their coöperation. Thus Brazil is in a position to control the Madeira river outlet from Bolivia and to deny privileges of navigation on that portion of the Acre which lies within her territory.

* * *

MENTION was made recently in this journal of a visit to New York of two officials of the state of Amazonas, Brazil, whose object was supposed to be the making of a loan for that state. Upon their return they stopped at Pará, where they declined to be interviewed for the newspapers on the result of their mission. A late number of the *Brazilian Review* (Rio de Janeiro) reports: "It is now said that the reported loan obtained by the state government [of Amazonas] in the United States was made to it by capitalists represented by Mr. Charles R. Flint, of New York. The amount mentioned is nominally £2,000,000, to be converted into Brazilian currency at the exchange rate of 12*d.* per milreis. The syndicate redeems the present debt of the state by paying £30 for every 5 per cent. currency bond of 1:000\$. The commission amounts to 4.000:000\$. The state government is said to have agreed to pay 8.000:000\$ for the Manáos electric tramway."

A bond of 1000 milreis, at the exchange rate mentioned, would be worth £50, and its surrender for £30 means a considerable scaling down of the state's obligations. The commission named would be equivalent to £200,000, and the price mentioned for the Manáos railway £400,000, or about \$2,000,000. This road was constructed and has been operated by the Manáos Railway Co., an American corporation organized by Charles R. Flint. The company operates fifteen miles of single track road, employing usually twenty cars, and the plant is reported to be for the most part in good condition. The company is subsidized and has exclusive rights for 30 years.

LETTERS TO THE EDITOR.

"GERMAN PRICES OF RUBBER SCRAP."

TO THE EDITOR OF THE INDIA RUBBER WORLD: The writer of a communication from London under this heading, in your issue of July 1, thinks that American manufacturers of reclaimed rubber make a big mistake in buying foreign scrap through agents. If your correspondent has ever handled any foreign scrap, I should like to ask if he ever had any invoice of goloshes on which there was not a deduction of some kind claimed, on account either of short weight, excess tare, or wrong packing of goods. I am frank to say that there is always some difference between the amount received by the reclaimer and my rendering of invoice, and it is just for this reason that the American reclaimer prefers to purchase through agents rather than direct. If he honors a draft for 100 per cent. or gives a letter of credit for that amount, he will have to make settlement with a shipper over 3000 miles away, and will be practically at the mercy, or honesty, of that party—I don't care which way you put it—to settle a claim for deduction. But in dealing through an agent he has some one on this side of the ocean to look to, to straighten matters out, and whom he can hold responsible. Evidently, your correspondent is not aware that foreign shoes are sold on 90 per cent. sight draft against bills of lading and in some cases 75 per cent., but I am pleased to inform him that I am taking orders on these latter terms and know of other agents who are doing so.

Your correspondent also suggests that if American reclaimers would keep the foreign dealers informed in regard to the crude rubber market, it would help to keep down prices of rubber scrap. It would seem hardly necessary in these enlightened days, when market reports are published daily in all parts of the civilized world, for consumers in one country to notify dealers in another country what the commodities those dealers handle are worth. The large German exporters of scrap rubber are wide awake business men, who know exactly what the goods they are dealing in and such as may have a bearing on these are bringing at the centers in which they expect to sell. But as a matter of fact, prices of scrap are but slightly governed by an advance or decline in crude rubber, but are controlled by the supply and demand of scrap itself.

Again your correspondent says: "The reclaimers should certainly not make any allowance for tare. I think this would be a matter for the Reclaimers' Association in America to look into." There was a Rubber Reclaimers' Association once, but it now exists only in name. Among the rules which it adopted was this:

Ninth.—Old rubber boots and shoes of foreign manufacture shall be bought on same conditions as those of domestic manufacture, *c. i. f.*, port of entry.

The failure to adhere to this rule has been much discussed among consumers, the reason evidently being that, whenever one reclaimer ignores it, the others follow like a flock of sheep.

W. C. COLEMAN.

Boston, Mass., July 3, 1902.

THE COLONIAL RUBBER CO. (EUROPE.)

TO THE EDITOR OF THE INDIA RUBBER WORLD: Your British correspondent, in referring recently to the decision of the Colonial Rubber Co. to close its works at Cologne-Ehrenfeld, Germany, intimates as a fair supposition that the manufacture of hollow playing balls under the Cox patents, under

which this company hold the Continental rights, may have proved less profitable than was anticipated. As a shareholder in the Colonial company, and familiar with its affairs, I may be permitted to make a statement in regard to the same.

The company's capital being only 3,250,000 francs, with which three large rubber factories had to be kept going, and of which capital of course a fairly large proportion was sunk in lands, building, plant, and machinery, it was found that a further increase of capital would be indispensable, and steps were taken to that effect. The very unfavorable condition of the Brussels market, where enormous sums had been lost in Colonial and Russian ventures, rendered this financial operation impossible for the time being. The Ghent works of the company had been considerably enlarged during the past two years, and an ebonite department had been added. As this factory is without doubt the largest in Belgium, a considerable proportion of the company's capital had been absorbed by it.

At Prouvy-Thiant, in France, the company possesses another large factory which is constantly growing in importance, while at Cologne a "mechanical" department had been added to the ball manufacturing carried on there from the commencement of the company's operations. It seems that with this latter addition the board made a mistake; not only was the rubber trade in Germany generally in a very depressed condition at the time when this addition was made, but, particularly in western Germany, the trade is keenly competed for, and a new and foreign factory has to struggle very hard against the old established rubber concerns.

For these reasons the mechanical department was closed down, while the rubber ball manufacturing, which had always been a satisfactory feature, was continued. It was soon found, however, that this department alone could not carry the weight of the great general expense, and the board no doubt arrived at a wise decision in closing the works down and concentrating the company's capital and energy upon the Belgian and French factories. That the Cox machine and the Eccles company's patents are not to blame is demonstrated by the success which the Hartford Rubber Works Co. score in the United States, to judge from the recent repeat order for ball making machines, and from the sale of the Austrian patent of the Eccles company to the Oesterreichisch-Amerikanische Gummi-fabrik Actiengesellschaft, in Vienna.

The Eccles Rubber Co. herself, thanks to the preëminence which the English patent assures her for the ball trade in the United Kingdom, is gradually gaining a firm footing again, which she lost owing to the great break in the cycle trade during the last few years, and which affected her through the Birmingham steel fittings works, where a large share of her capital was invested.

A SHAREHOLDER.

London, June 27, 1902.

RUBBER EGG SHELLS A JOKE.

TO THE EDITOR OF THE INDIA RUBBER WORLD: In regard to a paragraph in your June 1 issue [page 288] copying a newspaper statement to the effect that I had invented an India-rubber cover for eggs, or something of that kind, I wish to say that the story was sent out from this city by a newspaper correspondent as a joke.

GROVER HARSHMAN.

Tiffin, Ohio, June 5, 1902.

SOME WANTS OF THE RUBBER TRADE.

[250] FROM a fountain pen manufacturer: "Can you give us some information about rubber firms, located convenient to New York, who might be interested in doing some vulcanizing outside of their own work?"

[251] "Will you please furnish us with the names and addresses of some manufacturers of machines for making cotton hose jackets?"

[252] "We have an inquiry regarding a brand of garden hose known as the 'Sunproof,' which withstands the summer heat of southern California and Arizona, the life of the hose being guaranteed for ten years. Can you give us the name of a manufacturer?"

[253] "Will you kindly inform us who manufactures the Fidelity brand of cotton fire hose?"

[254] We have a request from a leading bicycle agency in the city of Mexico for the names of parties able to supply "rubber coats for bicycle riders."

[255] From a rubber factory: "We should be glad to know of the best place to buy collapsible tubes for rubber cement."

[256] "Please send us the names of parties from whom we can buy prepared Pontianak, ready for use."

[257] "We should like a list of as many hard rubber manufacturers in the United States as you know, indicating such as manufacture hard rubber sheets."

[258] "Please give me the addresses of manufacturers who weave material for suspenders."

[259] "We should like you to advise us who are the makers of Caldwell's covered gas tubing."

[260] "Can you give me any information as to where I can buy the filler called 'Petrifite,' mentioned in Mr. Pearson's 'Crude Rubber and Compounding Ingredients?'"

[261] "Kindly advise us from whom we can secure a varnish such as rubber manufacturers use in coating drills and sheeting, to make luster finish."

NEW TRADE PUBLICATIONS.

"THE Goodrich Rubber Man's Vacation" is the title of one of the best pictures that has yet come from the advertising department of that enterprising Akron house. It is wholly up-to-date in that the foreground of the picture shows a game of ping pong on the lawn at the Goodrich Camp. A delightful surprise comes to whoever carefully scrutinizes the faces of the beautiful women who are disposed in comfortable attitudes in hammocks and under the trees, when it slowly dawns upon them that they recognize "Helen of Troy," "Vivian," "Josephine" and others of the Goodrich beauties. The picture is in every way artistic, nor is there a suggestion of caricature in any part of it.

FRANZ CLOUTH RHEINISCHE GUMMIWAAREN FABRIK M. B. H. (Cöln-Nippes) have issued a handsomely printed brochure, for distribution at the industrial and commercial exhibition for the Rhineland and Westphalia, at Düsseldorf, describing their extensive variety of manufactures of India-Rubber and Gutta-percha. [5"×9¼". 34 pages.]

THE DERMATINE CO., LIMITED (95, Neate street, London, S. E.), issue, under the title "Prix Courant de Dermatine," a catalogue in French, containing illustrations and descriptions of their various products, including belting, hose, tubing, valves, etc., together with prices. This is in effect, a translation of their English list, mention of which has been made already in THE INDIA RUBBER WORLD. It includes also several pages of interesting matter on the origin of Caoutchouc and Gutta-

Percha, with maps of the rubber producing zone, and notes on the history of the industrial uses of these materials. [6"×9¼". 36 pages.]

TREMONT RUBBER CO. (No. 218 Congress street, Boston) issue a handsome Souvenir catalogue of the "Wales-Good-year" rubber footwear, which they carry in stock. A prominent feature of the book is a picture of their store, "The Rubber Corner," followed by several pages of interior views, giving an impression of an enormous volume of business done, and portraits of their salesmen throughout New England and some other states, from whose appearance it may be assumed that they have contributed in no small degree to building up this business. [6¼"×9". 32 pages.]

THE VULCANIZED RUBBER CO., who have removed to No. 110 Grand street, New York, issue, under date of July 1, 1902, a new price list of the Hard Rubber Goods manufactured by them, which forms a conveniently arranged and well illustrated booklet. [4½"×8¾". 56 pages.]

"TALKS ON RUBBER" is an illustrated catalogue of rubber goods used for medical purposes in families or in hospitals, kept in stock at Riker's drug store in Sixth avenue, New York—an establishment which has long made a specialty of its rubber goods department, and has done much to educate its customers in the use of rubber goods of the classes referred to. The book is as fully illustrated as most catalogues of druggists' sundries manufacturers, and is provided with an index filling twelve columns. [5½"×8¼". 144 pages.]

ALSO RECEIVED.

CONSOLIDATED Rubber Tire Co., New York=The Kelly-Springfield Tire. 12 pp.

Munger Automobile Tire Co., Trenton, New Jersey=Munger Non Collapsible Pneumatic Tires for Motor Vehicles. 12 pp.

B. F. Sturtevant Co., Boston=Bulletin 46. Mechanical Draft. What it is; what it does. 12 pp.

Parker, Stearns & Sutton, New York=Alpha and Omega Superior Rubber Specialties. 24 pp.

American Vulcanized Fibre Co., Wilmington, Delaware=Catalogue and Price List. 34 pp.

The Baumann Rubber Co., New Haven, Connecticut=Price List of Red, Velvet, and American Balls. 4 pp.

Joseph Dixon Crucible Co. (Jersey City, New Jersey)=[Folder illustrating bridges treated with Dixon's silica-graphite paint.]

"DERMATINE" AND ITS USES.

AN essentially English product, but one that is used the world over, is a compound from which mechanical rubber goods are manufactured, and known as "Dermatine". The uses to which it is put are the manufacture of belting, hose, valves, and packings chiefly. The special excellences claimed for it are that it outlasts ordinary rubber compound, and is a better resistant of acids, grease, and heat and cold. Physically, Dermatine looks very much like a vulcanized rubber compound, but of an extremely fine and close texture. It is flexible, but cannot be stretched easily, and may be made very soft or as hard as vulcanite. "Dermatine" is the invention of Mr. M. Ziegler and was patented by him prior to the establishment of The Dermatine Co., Limited, which company now has extensive works in London, under the successful management of Mr. John Cooper. The basis of Dermatine is a substitute for Gutta-percha called "gum percha". This is compounded with waste rubber, India-rubber, sulphide of antimony, peroxide of iron, sulphur, alum, asbestos, sulphide of zinc, and carbonate of ammonia, these ingredients, of course, being varied for different products.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values for the first eleven months of the current fiscal year, compared with the same months of three years preceding—not including exports to Hawaii and Porto Rico:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
July-April....	\$514,470	\$939,671	\$1,437,099	\$2,891,240
May, 1902....	64,102	41,387	170,349	275,838
Total.....	\$578,572	\$981,058	\$1,607,448	\$3,167,078
1900 01....	508,873	684,256	1,584,864	2,777,993
1899 00....	492,472	372,262	1,258,515	2,123,249
1898 99....	(a)	229,892	1,362,088	1,591,980

(a) Included in "All Other" prior to July 1, 1899.

Pairs of rubber footwear exported in the same periods:

1898-99.	1899-1900.	1900-01.	1901-02.
425,574	673,961	1,386,597	2,458,387

Exports of reclaimed rubber during the same months were:

1898-99.	1899-1900.	1900 01.	1901-02.
\$343,261.	\$445,766.	\$386,396.	\$347,746

GREAT BRITAIN.

EXPORTS of rubber manufactures during January-June:

	1900.	1901.	1902.
Boots and shoes.....	£723,476	£73,261	£69,642
Unenumerated.....		548,949	532,836
Total.....	£723,476	£622,210	£602,478

There were also exported during January-June, 1902, "Apparel and Slops, waterproofed by any process," to the value of £123,379.—The number of pairs of rubber boots and shoes exported during the first six months of 1902 was 669,012, against 660,732 for the same period of 1901.

EXPORTS OF RUBBER FOOTWEAR IN 1901.

To—	Doz. Prs.	To—	Doz. Prs.
France.....	26,026	Queensland.....	3,798
Belgium.....	15,829	British Guiana.....	3,528
Turkey.....	14,803	New South Wales.....	2,287
China.....	9,243	New Zealand.....	2,215
Norway.....	7,611	Victoria.....	1,803
Germany.....	7,163	South Australia.....	933
British East Indies.....	6,281	Canada.....	754
Holland.....	5,611	British West Indies.....	860
Cape Good Hope.....	3,657	West Australia.....	525
Denmark.....	2,539	Tasmania.....	259
Other foreign lands.....	2,859	Other British Possess....	656
Hongkong.....	13,705		
Natal.....	5,059	Total [Doz. Prs.].....	138,084

IMPORTS OF RUBBER FOOTWEAR IN 1901.

FROM—	Doz. Prs.	FROM—	Doz. Prs.
Germany.....	57,946	Other foreign lands....	70
Holland.....	1,124	Canada and Brit. Possess.	7,244
Belgium.....	657		
France.....	10,344	Total [Doz. Prs.]....	229,191
United States.....	151,806		

PROFESSOR PROBST, a native of Geneva (Switzerland), is the inventor of a swimming suit which is made largely of India-rubber. It can be put on very quickly and is so buoyant that nearly one-half of the body remains above the water. The suit is provided with a number of conveniences in the way of water tight pockets, which may contain food, matches, lamp, etc. The professor plans to live the whole month of August in the water, wearing his suit. He will then go to Havre to remain fifteen days in the sea.

FRENCH CONGO exported 1,444,819 pounds of Caoutchouc in 1900 and 1,440,423 pounds in 1901.

RUBBER NOTES FROM EUROPE.

THE plan for the amalgamation of W. T. Henley's Telegraph Works Co., Limited, and Callender's Cable and Construction Co., Limited, both of London, mentioned in THE INDIA RUBBER WORLD of March 1, 1902 (page 169) has been dropped, owing to the difficulty of arriving at a mutually satisfactory valuation of the properties. Both companies have been doing a profitable business, friendly relations continue to exist between them, and it is not improbable that the question of amalgamation may again be taken up. The Henley works earned £64,447 19s. 9d. on the business of 1901, and Callender's £71,978. Each company was able to declare a dividend of 20 per cent. on their ordinary shares, after providing for the preference share dividends and interest on their debentures. At the annual meeting of Henley's it was stated that it might be necessary before long to increase their capital from £175,000 each of preference and ordinary share capital, to £200,000 each. The profits for the last year were stated to have been larger than ever before, in spite of increasing competition from Germany and from the United States.

—The Rheinische Gummiwaaren-Fabrik, Franz Clouth, m. b. H. (Cologne-Nippes) have a notable exhibit at the Düsseldorf exhibition, in the Mining building. In the hall situated to the left of the dome has been set up a figure of a diver fully equipped with all the necessary apparatus for diving work. An exhibit of waterproof tent and roofing materials is made by this firm in the section of the building to the right of the dome.

—Dr. Robert Henriques, a German chemist of ability, died on June 16, at Bayreuth, after a long and severe illness. The deceased for some years was on the staff of the *Gummi Zeitung* (Dresden) and was the founder of the *Chemische Revue* (Berlin), and through these and other channels published the results of many scientific researches bearing upon India-rubber.

—The *India-Rubber Journal* (London) contains a note on the bad behavior of some hose used at a recent disastrous fire in London, pointing to the conclusion that the authorities must have been very negligent in looking after the condition of the supplies in their care. Mention is made of the North British Rubber Co., Limited (Edinburgh), having been awarded a contract for hose for the London fire brigade for the ensuing year at £6 2s. 7d. for 50 foot lengths, as against £7 10s., the contract price of last year. These figures are equivalent to 64½ and 70 cents, respectively.

—The Süddeutsche Kabelwerke-Actiengesellschaft (Mannheim), with 3,000,000 marks capital, closed their account for 1901 with a deficit. In November, 1901, they acquired shares amounting to 400,000 marks in the Mannheimer Telegraphendraht- und Kabelfabrik, with 1,000,000 marks capital, and members of each firm became directors in the other. The second company named also closed the year with a deficit.

—The German imperial railway directorate, at Berlin, on May 30 opened tenders for rubber supplies, as follows: *Hose*—8468 pieces for brakes; 2347 pieces for tender use; 4100 pieces for wetting coal; 13,030 pieces for steam heating; 2460 kilograms for gas leaders; 7995 meters (rubber lined hemp). *Sheet rubber*—10,045 kilograms. *Rings*—38,230. *Rubber covering for steps*—500 kilograms.

—The report for 1901 of the Hamburg South American Steam Navigation Co. states that the monthly service of their steamers from Europe to Pará and Manáos, entered into jointly with the Hamburg American Packet Co., were not productive of profit, but the directors are hopeful of their proving successful eventually.

NEWS OF THE AMERICAN RUBBER TRADE.

A GOLF BALL PATENT INFRINGEMENT SUIT.

THE Haskell Golf Ball Co., the owner of the Haskell and Work golf ball patent, and The B. F. Goodrich Co., the sole licensee for the United States under the patent, have entered suit against The Kempshall Manufacturing Co. for alleged infringement of the patent—No. 622,834, dated April 11, 1899. The suit is brought in the United States circuit court for the southern district of New York. The bill of complaint was filed on July 2, 1902, by Charles Neave, of Richardson, Herrick & Neave (New York), attorneys. The defendant must enter appearance on the first Monday in August. It is understood that John R. Bennett, of New York, is counsel for the defendant. The Haskell Golf Ball Co. was organized early in 1901 under the laws of the state of Ohio, with Coburn Haskell as president; Bertram G. Work, vice president; and Silas Hitchcock, treasurer. The Haskell golf ball was the joint invention of Messrs. Haskell and Work, at a time when the solid Gutta-percha ball was accepted as the best type of golf ball. The invention was not only a radical departure from the old methods of manufacture, but was in other ways a distinct advance, and was the result of many experiments and tests on the part of the inventors. The fact that vulcanized rubber under tension took on the peculiar deadened resiliency of Gutta-percha, modified by the quickened springiness of rubber, was a fact of which the world was ignorant. It became in fact a new material, and its usefulness in golf balls and in various other articles was fully recognized by the inventors. The Haskell company and the B. F. Goodrich Co., being fully aware of the value of the invention, have no idea of allowing any one to infringe their rights.

SUIT AGAINST AN ALLEGED SHOE-LAST MONOPOLY.

THE Hood Rubber Co. has filed suit in the United States circuit court at Boston against the United States Rubber Co., E. D. Stone, of Framingham, Massachusetts; the Apsley Last Co., the Middlesex Last Co., the George B. Cox Last Co., and the estate of William H. Corey, former owner of the Brockton Last Co. The bill of complaint alleges that the United States Rubber Co. entered into an agreement with the various last companies co-defendants in the suit, to secure the exclusive use of the various rubber shoe lasts manufactured by them for the benefit of the United States company and its subsidiary companies, such agreement being alleged to be contrary to law and tending to restrict trade. The alleged combination in restraint of trade is claimed to have existed from April to January of the year in which the Hood Rubber Co. was in process of organization, and the suit is in the nature of a claim for damages. From the standpoint of the United States Rubber Co. the suit seems to be viewed in the light of an offset to several pending cases against the Hood company by the United States company, one being for an alleged infringement of patent and another against Mr. Hood personally for alleged breach of contract in leaving the United States company and starting a competing factory.

COLONEL COLT TO THE "CAPTAINS OF INDUSTRY."

JUST before starting for a vacation in Europe, Colonel Samuel P. Colt, president of the United States Rubber Co., tendered an elaborate luncheon to a number of gentlemen interested in the rubber shoe industry, at the Squantum Club, near Providence, Rhode Island, on the afternoon of July 1.

There were present the entire board of the United States Rubber Co., several gentlemen connected with the general offices of the company, and some of the directors of the constituent companies. But a feature which was emphasized especially was the presence of the superintendents of all the factories operated by the United States company. It was to the latter that Colonel Colt, the principal speaker on this occasion, addressed his *post prandial* remarks. He said in substance that the executive officers of the company might plan and counsel, but after all the success or failure of their undertaking depended on the superintendents of their mills. It was to them that the company looked for the manufacture of the goods they sold. "There are two things we can call on them to do," said Colonel Colt. "How are we to meet competition, not to crush it, but to do as well as, and a little better than, our competitors? Who can do the most in that line? It is the superintendents of our mills. We want them to produce the best article at the lowest price. We want them to save in every way but one, and that is at the expense of the quality of the product." Colonel Colt expressed himself as a believer in industrial consolidation, which, he said, had come to stay. Successful business in every line would have to be done on a large scale. The ambition of the company should be to supply every man, woman, and child in the United States—and some in Europe—with rubber footwear, and he believed that with the coöperation of the superintendents of their factories—"the captains of our industry" Colonel Colt called them—the company would be able to come so near the result they wanted that everybody concerned would be surprised. One other thing Colonel Colt said was that the United States Rubber Co. to-day had the best men in the rubber business in the United States; they had no superior, and he believed they had no equal.

Further remarks were made by Superintendents A. L. Comstock, of the American Rubber Co.; Frank L. Locke, of the Boston Rubber Shoe Co.; and James Deshler of the factory at New Brunswick, New Jersey; Harry H. Shepard, manager of the National India Rubber Co., and several gentlemen connected with the office management of the United States company.

Colonel Colt sailed for Europe from New York on July 5. On the evening of July 4, a little celebration in honor of his departure was given at his residence in Bristol, the program including a band concert, a display of fireworks, and a dinner at the house.

A NEW RUBBER FACTORY FOR TRENTON.

THE retirement of George R. Cook as treasurer and general manager of The Empire Rubber Manufacturing Co. (Trenton, New Jersey), the details of which were reported in the last INDIA RUBBER WORLD, has been followed by the organization of a new company in that city of which Mr. Cook will be the head. The Eureka Rubber Manufacturing Co. was incorporated July 15, under the laws of New Jersey, with an authorized capital stock of \$500,000. The company will begin business with a paid in capital of \$200,000, subscribed for by the incorporators in the following amounts: George R. Cook, \$92,500; Barker Gummere, Jr., \$40,000; Edmund D. Cook, \$32,500; William S. Hancock, \$20,000; Elmer Ewing Green, \$15,000. The officers elected are George R. Cook, president; William S. Hancock, vice president; John A. Lambert, secretary; Edmund D. Cook, treasurer. The site selected for the new factory is on

East State street, beyond the city line. Orders have been placed for the machinery, and the building will be designed to fit the mechanical equipment, all with the idea of having the new plant in operation at the earliest date possible. The new factory will be devoted to the production of mechanical rubber goods.

A VISIT FROM MR. BUCKLETON.

MR. ERNEST E. BUCKLETON, general manager of the Northwestern Rubber Co., Limited, Litherland, Liverpool, England, made a flying trip to the United States in July, returning by the *Oceanic* on the 23d. Mr. Buckleton is, as of yore, earnest, energetic, and full of geniality. The samples of reclaimed rubber in black, tan, and red, that he showed as a product of the Liverpool works are wonderful, and his statement that European manufacturers are already large buyers is easily credited. During the past year Mr. Buckleton, in addition to his duties at Liverpool, has visited nearly every rubber factory in Great Britain and on the Continent.



ERNEST E. BUCKLETON.

A PRIZE EXHIBIT OF FIRE HOSE.

AT the convention of International Association of Fire Chiefs, to be held at the Grand Central Palace, New York city, commencing September 16, the Eureka Fire Hose Co. (New York) will make practically the same exhibit as they did at the Pan-American Exposition, at Buffalo, and for which they were awarded a gold medal. They will also exhibit the following medals:

For Premier Honors, Centennial Exposition . . . Philadelphia, 1876
American Institute New York
Decorative Legion of Honor and Gold Medal Paris, 1878
Gold Medal Barcelona, 1888
Gold Medal, Pan-American Exposition Buffalo, 1901

AMERICAN BICYCLE CO.

It is currently reported that Colonel Albert A. Pope will succeed R. L. Coleman as president, shortly after the beginning of the current fiscal year, which dates from August 1, and that several other changes will be made in the board of directors. The annual meeting will occur in October.

RUBBER GOODS MANUFACTURING CO.

The New York *Journal of Commerce* reported, July 26: "Wall Street had a rumor yesterday to the effect that the control of Rubber Goods Manufacturing Co. had passed into new hands, but this was officially denied. The report probably grew out of the fact that the stocks of the company on the Stock Exchange scored a substantial advance."

AMERICAN CHICLE CO.

The annual meeting of stockholders was held at Jersey City, New Jersey, on July 15. The old board of directors was re-elected and the directors re-elected the retiring officers. The board is now composed of W. J. White (president), G. H.

Worthington (vice-president), Henry Rowley (secretary and treasurer), Thomas Adams, Thomas Adams, Jr., E. E. Beeman, S. T. Britton, W. B. White, J. P. Primley, T. J. Jefferson, Charles R. Flint. The financial statement made is understood to have been favorable, but no details were given out for publication.

LATIMER TIRE AND RUBBER MANUFACTURING CO.

The assets of this company, at Huntley, near Chicago, were sold at auction on June 18, by order of the United States district court, the company having gone into bankruptcy. The amount realized was \$2335.60. As advertised by the receiver, the assets included "about \$2000 worth of rubber tires," retaining wire, channels, friction cloth, rubber shoddy, whitening, etc., together with "¼ ton gum mill, ½ ton gum mill, one washer," iron vulcanizer, 40 molds, tire setters, shafting, pulleys, belting, etc. The company owned a patent on a "compound spring" solid rubber tire, which was illustrated in THE INDIA RUBBER WORLD [January 1, 1901—page 121] and was incorporated under the above title April 30, 1901, with \$25,000 capital, to manufacture this tire and a general line of rubber goods. This item was inadvertently omitted from our last issue.

A LARGE ORDER FOR FIRE DEPARTMENT HOSE.

The Eureka Fire Hose Co. (New York) recently secured an order for 31,500 feet of cotton rubber lined fire hose from the New York city fire department. It embraces 2000 feet 1½ inch "Paragon" brand; 8000 feet 2½ inch, 8000 feet 3 inch, and 2000 feet 3½ inch "Eureka" brand, for the boroughs of Manhattan and the Bronx. Also, 2500 feet 1½ inch "Paragon" and 6000 feet 2½ inch and 3000 feet 3½ inch "Eureka" brand, for the boroughs of Brooklyn and Queens.

NEW YORK STOCK EXCHANGE QUOTATIONS.

UNITED STATES RUBBER CO. :

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Jun. 21	340	15	14 ½	860	55	55
Week ending Jun. 28	800	15	14 ½	500	54 ½	52 ½
Week ending July 5	450	14 ¾	14 ¼	697	55	54
Week ending July 12	700	14 ¾	14 ¼	700	55	55
Week ending July 19	500	14 ¾	14 ¼	400	55	55
Week ending July 26	1200	14 ¾	14 ¼	400	55	55

RUBBER GOODS MANUFACTURING CO. :

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Jun. 21	480	20 ½	19 ¾	265	65 ¾	65 ½
Week ending Jun. 28	1,000	18 ½	18 ½	100	66 ¾	66 ¾
Week ending July 5	200	18	17 ½	....	....	....
Week ending July 12	2,200	19 ¾	17 ½	200	68	66 ½
Week ending July 19	....	....	....	100	68	68
Week ending July 26	1,740	19 ¾	17 ½	400	68	63

NEW INCORPORATIONS.

THE Eureka Rubber Manufacturing Co. (Trenton), July 15, under New Jersey laws, to manufacture mechanical rubber goods; capital, \$500,000. Incorporators: George R. Cook, Edmund D. Cook, Barker Gummere, Elmer Ewing Green, and William S. Hancock, all of Trenton.

=Des Moines Rubber Co. (Des Moines, Iowa) July 1, under the laws of Iowa; capital \$25,000, paid in. To succeed to the business of A. B. George & Co., wholesale dealers in rubber boots and shoes. The directors are: A. B. George, of Des Moines, and H. H. Perrin and Homer E. Sawyer, of the United States Rubber Co. The business will be continued at the present location, No. 307 Court avenue, under the management of Mr. George.

=The Gum Carbo Co. (Beaumont, Texas), July 19, under Texas laws; capital, \$10,000,000. Incorporators: Robert Bowie, Chicago, Illinois; W. F. Frue, Biloxi, Mississippi; R. E. Humphreys, Tom C. Swope, and George C. Waddill, of Beaumont. The purposes of the company, for manufacturing a substitute for rubber by refining Texas petroleum and combining with it cottonseed oil, have been referred to already in THE INDIA RUBBER WORLD.

=Newark Rubber and Specialty Co., July 25, under New Jersey laws; to job and manufacture rubber goods, including druggists' sundries; capital, \$100,000. Incorporators: John E. Halen, Frederick C. Fischer, Solomon Feist. Principal office: No. 36 Lawrence street, Newark, N. J. It is intended to establish offices in New York, Buffalo, and Philadelphia.

TRADE NEWS NOTES.

THE Hood Rubber Co. (Boston) filed an official certificate on July 1, with the commissioner of corporations of Massachusetts, to the effect that their paid up capital stock had been increased from \$800,000 to \$900,000.

=The office equipment at the factory of the Boston Woven Hose and Rubber Co. (Cambridgeport, Mass.) has been increased by the establishment of two new telephone lines, making a total of four long distance telephone connections and twenty branch lines connecting the various departments in the plant. A branch of the Postal Telegraph Co. has also been established at the factory offices. The company are to be congratulated on having completed the largest and best year's business ever done by them.

=John Robson, who for some time past has been superintendent of the "Alice" and Millville rubber factories, has been appointed general-superintendent of the Woonsocket Rubber Co., in which capacity he will continue to have charge of both mills. George Schlosser, whose duties have been confined hitherto to the "Alice" mill, has been given the title of superintendent, with supervision of both factories.

=The Diamond Rubber Co. (Akron, Ohio) on July 4 sent to their tire customers a souvenir card, with a firecracker attached, together with the statement: "We regret to state that Diamond tires *will not explode*, so we enclose a cannon cracker to make up for the loss."

=Charles A. Coe is again in Boston, and is at present taking the place of the late H. H. Perrin at the office of the United States Rubber Co., in charge of the sale of the "Wales-Good-year" brand of rubber footwear.

=Frederick Cook, for seventeen years treasurer of the Woonsocket Rubber Co., has resigned, and the position has been accepted by Clarence H. Guild, who will retain also his office as secretary of the company. It is understood that the retirement of Mr. Cook was due to the removal of the company's office headquarters from Providence, where he lives, to Woonsocket.

=William F. Askam, general superintendent of the U. S. Rubber Reclaiming Works, has removed his residence to Buffalo, New York, where the company have established their new plant.

=M. H. McColm, who had been identified with the Eureka Fire Hose Co. (New York) for several years, and was latterly in charge of their Boston office, resigned his position with the company, to take effect on July 15, on account of ill health.

=Two 100 H. P. boilers for the Alabama Tube and Iron Co. (Helena, Alabama) are in process of construction at the works of the Hazelton Boiler Co. (Rutherford, New Jersey). Additional boilers have been ordered by many of the Hazelton company's old customers—a sufficient commentary on the quality of the work.

=The National India Rubber Co. (Bristol, Rhode Island), who maintain an efficient mill fire department, have decided to use their factory whistle, instead of a bell, as a signal for fires and for practice drills, for the reason that the whistle can be better heard throughout the factory.

=The award for supplying 6000 pounds of rubber bands for the United States post office department and the postal service, for the fiscal year beginning July 1, 1902, was made to The Seamless Rubber Co. (New Haven, Connecticut). Ten firms, of whom six were manufacturers, submitted thirteen bids, three of the bids being for higher priced goods than "standard." The bid accepted was 34 per cent. lower than the highest bid made; 12 per cent. lower than the average of all the bids made; and 8 per cent. lower than the average for "standard" goods.

=L. S. Hoyt, proprietor of the Hoyt Rubber Co. (Boston, Massachusetts) has taken in as co-partner B. E. Phillips, Jr. The company expect to enlarge their output of work gradually into a full line of mechanical rubber goods.

=The Standard Rubber and Oil Cloth Co. (Campello, Massachusetts) are reported to have filled some orders for the British government for ponchos and other army equipment for the soldiers in South Africa, in addition to considerable orders of the same kind for the United States government. The plant operated is that owned formerly by the Standard Rubber Co.

=Mr. A. H. Overman, who is now in England, and is a member of the Clarkson & Capet Steam Car Syndicate, at Chelmsford, has just ordered by cable another set of Bailey's "Won't Slip" tires, the only tires, so he claims, that do not slip on London's wooden pavements.

=Philip McGrory (Trenton, New Jersey) has bought a quantity of rubber machinery discarded by the International Automobile and Vehicle Tire Co. in removing from Newton Upper Falls to Milltown, New Jersey, and also such of the plant of the Meyer Rubber Co., at that place, as will not be wanted by the International company. Mr. McGrory, in connection with James Norton, of Boston, has also bought a quantity of machinery from the U. S. Rubber Reclaiming Works at Jersey City.

=The new "Joint Stock Companies act" has just been passed the Dominion parliament. This allows of greater liberty in the formation of companies than the Canadians have in the past enjoyed.

=Fire from an unknown cause in a storehouse of the Reading Rubber Manufacturing Co. (Reading, Massachusetts) caused damage to the amount of \$1100, on July 17.

=Mr. Townsend Cocks has been elected treasurer of the New Jersey Car Spring and Rubber Co. (Jersey City), succeeding Mr. Charles P. Cocks.

=Mr. C. H. Arnold, of Reimers & Co. (Boston, Mass.), who is taking a trip over the Northern Pacific road, will be on the Pacific coast by the time this reaches readers of THE INDIA RUBBER WORLD, and a week or ten days later he will be in Boston.

=Mr. W. B. Smith Whaley, of Boston, who is an expert in electrical power transmission, and has already paid considerable attention to problems in equipping rubber mills, has organized a \$10,000,000 company in the West, which is planning to erect the largest cotton mill in existence.

=Mr. A. H. Alden, president of the New York Commercial Co., is again at his offices in the Dun building, having returned from abroad the middle of the month.

=Mr. George A. Wies, treasurer of the Eureka Fire Hose Co., New York, is confined to his home by a slight illness.

=The Boston Belting Co. have issued a neat folder devoted to Fire Hose for factory and mill protection, that will interest those who buy goods in this line.

=On the New York Stock Exchange July 29 common stock of Rubber Goods Manufacturing Co. sold up to 22 and preferred to 70. Within a month these shares had sold as low as 18 and 66%, respectively.

=A dividend of 1 per cent. on the common stock of the American Chicle Co. will be payable August 10.

=The factories of the Boston Rubber Shoe Co. were closed on July 30 for two weeks.

PERSONAL MENTION.

THE Hon. Elisha S. Converse, president of the Boston Rubber Shoe Co., celebrated his eighty second birthday at his home in Malden, Massachusetts, on July 28. The immediate members of his family and relatives gathered for a family dinner, and Mr. Converse received the greetings of hundreds of callers.

=Mr. Edward B. Kelley, of the Mechanical Fabric Co. (Providence, Rhode Island), has returned from a vacation in England.

=On the retirement of Mr. John J. McGill as general manager of a Canadian Rubber Co. of Montreal, he was presented by the employes with an illuminated address testifying to their regret at his departure, to which Mr. McGill made an appropriate response.

=Mr. H. D. Warren, president of the Gutta Percha and Rubber Manufacturing Co. of Toronto, Limited, reached New York on the *Oceanic*, July 16, after an absence in Europe of several months.

=Captain John J. Farley, recently elected commander of Company C, second regiment of infantry, Rhode Island militia, was presented with a uniform by his associates in the druggists' sundries department at the National India Rubber Co.'s factory.

=Mr. Fred. T. Alden, of the Boston Belting Co., won first prize in the Fourth of July parade at Winthrop, Massachusetts, on the occasion of the town's semi-centennial celebration.

=Mr. George Puchta, president of the Queen City Supply Co. (Cincinnati, Ohio), agents for the Boston Belting Co., has been elected president of the Business Men's Club, of that city.

=Miss Ida Pauline Towner, daughter of Mr. H. N. Towner, of the leading rubber goods house at Memphis, Tennessee, is making a tour of Europe this summer.

=Mr. Theodore S. Bassett, president of the U. S. Rubber Reclaiming Works, was not able to attend the summer outing of the New England Rubber Club, owing to illness.

=The Hon. E. S. Converse has sent to the Editor of THE INDIA RUBBER WORLD, some verses on the Converse park in Malden, known as "Pine Banks." These verses were written by a day laborer who lived in the vicinity and whose sudden advent as a poet not only surprised all who knew him, but delighted them as well with the excellence and smoothness of his rhyme.

OBITUARY.

JOHN L. SHEPARD, foreman of the clothing department of the factory of the National India Rubber Co. (Bristol, Rhode Island) for nearly twenty-five years, died July 10 as the result of strokes of paralysis experienced earlier in the month. Mr. Shepard was born at Cold Spring, Connecticut, August 23, 1845, and became connected with the National factory at the age of twenty-one. Last Autumn he became lessee of the D'Wolf Inn, at Bristol, which he managed in addition to his business at the rubber factory. He leaves a son, Charles R.

Shepard, who resided with him. He was a member of the Masonic organizations at Bristol.

=Harry Harrington Perrin, of Boston, died July 14 in a private hospital at Brookline. He was born at Roxbury in 1856, and after leaving school was engaged successively in Boston, New York, and St. Joseph, Missouri, in the leather and shoe trades. He left the latter city to become connected with the Boston office of the United States Rubber Co., as assistant to Chester J. Pike, and later became connected with the firm of Converse & Pike, since which time he has been treasurer of the Tremont Rubber Co. (Boston). Mr. Perrin lately took charge of the sale of the "Wales-Goodyear" goods, and while out West in this connection, in April last, he became ill at St. Joseph, and never afterward recovered his health.

=The many friends of Mr. Henry J. Doughty, of Providence, Rhode Island, general manager of the Atlantic Rubber Shoe Co., will be grieved to learn of the blow that has fallen upon him in the death of his son, a youth of twenty.

VULCANIZED RUBBER CO. TO HAVE A NEW PLANT.

THE Vulcanized Rubber Co. (formerly the Goodyear Vulcanite Co.) have purchased ground near their present location at Morrisville, Pennsylvania, upon which they will at once erect a new plant. Their plans include the erection of four two story buildings, each 40x275 feet, and the expenditure of \$300,000, including the cost of new machinery.

THE RUBBER TRADE AT AKRON.

BY OUR RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Delay on the part of the city officials in vacating the land ceded some time ago to the Goodyear Tire and Rubber Co., has retarded work on the new building planned by this company for that site. It is expected, however, that ground will be broken the first week of August. Revised plans for the new structure provide for a building 300x60 feet, and three stories high above the basement. When completed, General Manager Seiberling states, the addition will make room for 100 more employes, who will be needed on account of the contemplated expansion of the company's business.

The Colonial Tire and Rubber Co., composed of Akron men, and who control the European trade outside of Great Britain for the Swinehart solid rubber vehicle tires, have established agencies at Berlin, Vienna, and Nice, and arranged for one at Brussels. The company have received a proposition from a French manufacturer looking to the control of the trade in these tires in that republic. A member of the company states that 3½ inch tires is the size mostly in demand.

Francis Seiberling, for himself and others, purchased at an assignee's sale on July 14, for \$25,700, the factory of The J. F. Seiberling & Co., used originally in the manufacture of mowers and reapers, and occupied subsequently by a bicycle concern now out of business in Akron. It is reported that a new rubber company will occupy the building, but Mr. Seiberling states that his associates are not yet ready to make their plans public.

It is said to be likely that the Faultless Rubber Co. will establish a branch factory at Ashland, Ohio. The company have recently closed contracts for goods in excess of the present capacity of their plant in Akron, and have received a proposition to occupy a manufacturing building at Ashland now idle, which is owned by H. B. Camp, of Akron, president of the Ashland and Wooster railroad, and also interested in the Faultless company.

The Goodyear Tire and Rubber Co. are preparing to manu-

facture the golf ball recently patented by A. T. Saunders, of Akron. The principle of this law is pneumatic, and the chief problem in its manufacture has been in filling the balls with compressed air. This obstacle has been overcome, however, and the ball will be placed on the market this season.

The Akron parties mentioned in connection with the establishment of a mechanical rubber goods factory at Cuyahoga Falls, Ohio, with \$50,000 capital, have permitted an option secured on a likely site to expire.

General Manager Harvey Mitzell, of the Pure Gum Specialty Co., at Barberton, has been in the East, buying additional machinery for the new buildings erected by that company.

The Diamond Rubber Co. have completed their experiments with the "King William" golf ball, and are ready to market it. The new ball does not show black when chipped, and possesses other merits which are expected to bring it into demand.

Superintendent A. H. Marks, of the Diamond Rubber Co., has become an enthusiastic *chauffeur*, and now owns the fastest automobile in Akron. Mr. F. A. Mason, general manager of the Akron Rubber Works, has also given up his team for a small and pretty carriage which requires no horses.

Secretary Charles W. Seiberling, of The Goodyear Tire and Rubber Co., is spending the summer at his cottage near Mackinac, in northern Michigan. General Manager F. A. Seiberling will also be there for some time during the month of August.

Treasurer A. H. Noah, of the Diamond Rubber Co., will spend part of August in pursuit of bass at Star Island.

Mr. H. C. Corson, formerly of The B. F. Goodrich Co., continues to manifest an interest in Akron affairs, having lately made a generous subscription to the funds of the Young Men's Christian Association. The names of several rubber manufacturers appear on the list.

THE OBISPO RUBBER PLANTATION.

A FAVORABLE report is made by Mr. Maxwell Riddle, of the Republic Development Co., who are in charge of the plantation above named, on the Vera Cruz and Pacific railroad, near Tuxtepec, in the state of Oaxaca, Mexico. A large amount of land had been cleared and cleaned, all of which, it was expected, would be planted to rubber by August 1, thus giving the new planting the advantage of the best growing time of the year. When this property was opened a fairly good market was expected for what are known as "short crops," such as corn and beans. The success of this part of the company's operations has exceeded all expectations. The plantation is located on the navigable Obispo river, which furnishes communication with the plain country below and the hill country above, and there are in the neighborhood several large towns. As soon as it became known that large crops were being grown on the plantation, it became a central point for trading parties, with the result that everything grown, beyond what was needed on the plantation, has been sold at good prices, and the plantation has become known throughout that section as "La suerte de los Gringos" (luck of the Yankees). It has been learned that the plantation embraces about 1000 acres of exceptionally good cacao land—something not found on every plantation—and the company are planning to plant this crop extensively, as it is, next to India-rubber, the most valuable product that can be grown in Mexico. The success of this property from the beginning, made a little more than a year ago, illustrates the value of experienced management in tropical planting. The Obispo plantation has had the benefit of the combined experience of five practical planters, all of whom have gained their experience in the management of their own private properties.

REVIEW OF THE CRUDE RUBBER MARKET.

THE month of July opened with a dull market at New York, as is customary at the midsummer season of stock taking and repairs at the factories. Manufacturers seemed fairly well supplied with rubber and, in view of the exceptionally large yield of Pará for the last crop season, and the liberal extent of visible supplies, they have shown little disposition during the month to buy beyond immediate requirements. At the same time, importers as a rule have not been pressing to make sales, and thus the market has been kept fairly steady. There has been a considerable volume of sales in the aggregate of small lots changing hands, and business has been more active when sellers have been willing to grant concessions. There was some improvement in the inquiry for rubber during the third week of July, but the month ends with a generally dull condition of the market. Receipts at Pará during the month were considerably larger than for the first month of the season last year, but the Pará market is reported steady. There is still some old Pará stock in New York, but the large surplus uncovered by the liquidation of an importing company at the beginning of the year has almost been liquidated. Centrals have sold practically as fast as received at this market, while Africans have chiefly been neglected, as is to be expected when coarse Pará declines to the level which has prevailed lately. There were good offerings at the last Antwerp sales, and a slight improvement in prices, but it is understood that very little of the rubber sold was for American account. Taking the list as a whole, prices are almost without change, compared with our last report.

New York quotations on July 30 were:

PARÁ.		AFRICAN.	
Islands, fine, new....	@67	Tongues.....	42 @43
Islands, fine, old....	@72	Sierra Leone, 1st quality	60 @61
Upriver, fine, new....	@70	Benguella.....	42 @43
Upriver, fine, old....	@75	Cameroon ball.....	40 @41
Islands, coarse, new....	@45	Flake and lumps.....	29 @30
Islands, coarse, old....	@	Accra flake.....	17 @18
Upriver, coarse, new....	@56	Accra buttons.....	41 @42
Upriver, coarse, old....	@	Accra strips.....	47 @48
Caucho (Peruvian) sheet	47 @48	Lagos buttons.....	43 @44
Caucho (Peruvian) ball	51 @52	Lagos strips.....	47 @48
CENTRALS.		Madagascar, pinky....	@70
Esmeralda, sausage....	@51	Madagascar, black....	@49
Guayaquil, strip.....	@48	EAST INDIAN.	
Nicaragua, scrap....	@50	Assam.....	52 @53
Mangabeira, sheet....	@40	Borneo.....	30 @40

Late Pará cables quote:

Per Kilo.		Per Kilo.	
Islands, fine.....	4200	Upriver, fine.....	4750
Islands, coarse.....	28100	Upriver, coarse.....	3250

Exchange, 12 1/32d.

Last Manáos advices: (July 27)

Upriver, fine.....	4750	Upriver, coarse.....	3250
--------------------	------	----------------------	------

Exchange, 12 3/32d.

PARA receipts July 1 to 26: 830 tons Rubber; 240 Caucho.

NEW YORK RUBBER PRICES FOR JUNE (NEW RUBBER.)

1902.		1901.		1900.	
Upriver, fine.....	70 @72	87 @90	89 @97		
Upriver, coarse.....	55 @56 1/2	62 @64	65 @72		
Islands, fine.....	68 @70	84 @87	87 @95		
Islands, coarse.....	45 @46	47 @53	47 @55		
Cameté, coarse.....	48 @52	54 @58	55 @60		

Para Rubber Statistics (Excluding Caucho).

NEW YORK.					
	Fine and Medium.	Coarse.	Total 1901.	Total 1902.	Total 1900.
Stocks, May 31..... tons	540	12 =	552	895	629
Arrivals, June.....	394	243 =	637	536	893
Aggregating.....	934	255 =	1189	1431	1522
Deliveries, June.....	526	250 =	776	552	919
Stocks, June 30.....	408	5 =	413	879	603

PARÁ.			ENGLAND.		
1902.	1901.	1900.	1902.	1901.	1900.
Stocks, May 31.....	80	150	2075	1350	1675
Arrivals, June.....	1240	526	886	350	675
Aggregating.....	1320	676	2061	1700	2350
Deliveries June.....	1255	639	818	675	875
Stocks, June 30....	65	37	2143	1025	1475

	1902.	1901.	1900.
World's supply, June 30.....	3,272	2,760	3,034
Pará receipts, July 1 to June 30.....	26,456	23,437	26,791
Pará receipts of Caucho, same dates.....	3,514	4,203	
Afloat from Pará to United States, June 30..	284	359	108
Afloat from Pará to Europe, June 30.....	367	460	689

The Amazonas Rubber Crop—July 1 to June 30.

RIVERS.	1900.	1901.	1902.
Purus..... tons	5,520	6,016	6,750
Madeira.....	2,495	2,694	2,844
Juruá.....	2,361	2,925	3,642
Javary-Iquitos.....	1,401	1,256	1,304
Solimoes.....	1,173	1,183	1,551
Rio Negro.....	512	521	383
Total.....	13,462	14,585	16,474
Caucho.....	3,356	3,786	3,485
Grand total.....	16,818	18,371	19,959
Shipped from Manáos.....	7,621	14,596	16,627
Shipped from Pará.....	9,197	3,775	3,322

Lisbon Rubber Receipts—January-June, 1902.

[By courtesy of MARTIN WEINSTEIN & Co.]				
	Benguela Niggers.	Loanda Niggers.	Congo Thimbles.	Other Sorts.
1902.....	496	325	31	65
1901.....	800	446	74	40
1900.....	1349	389	102	32
Total.....				1872

Balata.

LONDON, July 18.—Balata continues in fair request, but Block is scarce and dearer. At auction 50 packages offered and 26 sold, fair sheet rather rough at 2s. 4½d. to 2s. 5d; thick and dark pickings at 2s. 2d.

Balata in British Guiana.

THE annual colonial report for 1900-'01 says: "The amount of Balata collected during the year was almost double that of the previous year. Large tracts of virgin bullet tree forest was discovered, and this industry is in a very healthy condition at present." Exports in 1899-1900—237,824 pounds; in 1900-'01—425,371 pounds.

Ciudad Bolívar (Venezuela).

OFFICIAL statement of exports for two years, according to a British consular report:

	1900.	1901.
India-rubber..... pounds.	105,006	314,153
Balata.....	2,652,346	2,562,512

Through freight rates to London or Hamburg; Rubber, £5 per ton; Balata, £3 per ton.

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers:	
Old Rubber Boots and Shoes—Domestic.....	7½ @ 7½
Ditto.....	6½
Foreign.....	6
Pneumatic Bicycle Tires.....	6
Solid Rubber Wagon and Carriage Tires.....	7
White Trimmed Rubber.....	9
Heavy Black Rubber.....	4½
Air Brake Hose.....	2½ @ 2½
Fire and Large Hose.....	2½
Garden Hose.....	1½
Matting.....	1

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: At the sale on July 3 about 419 tons of rubber were exposed, of which 395 tons were Congo sorts. The sales amounted to 337 tons, of which 332 were Congos. Prices were practically unchanged for fine grades, such as Lopori I, Kassals, and other well conditioned upper Congo sorts, whereas sticky lots, which were largely represented, sold at 1 and 2 per cent. under valuation. On the whole, this result, considering the time of the year, may be regarded as satisfactory. The next sale will take place on July 31, when 240 tons—all Congo sorts—will be offered. Among the principal lots, with the broker's estimations, may be mentioned:

27 tons Aruwimi.....	francs 4.90
29 " Equateur.....	6.75
22 " Uellé.....	5.75
32 " Mongalla.....	6.05
18 " Upper Congo strips.....	6.
20 " Lower Congo red thimbles.....	1.75
10 " Lopori I.....	7.15

No sale will be held during August. The statistical summary for the first half of the year shows a decrease in importations as compared with last year of 437 tons, of which 330 tons are in Congo sorts.

C. SCHMID & CO.

Antwerp, July 10, 1902.

ANTWERP RUBBER STATISTICS FOR JUNE.

DETAILS.	1902.	1901.	1900.	1899.	1898.
Stocks, May 30..... kilos	464,675	825,442	877,626	503,350	190,263
Arrivals, June.....	297,949	537,709	282,176	418,266	124,532
Congo sorts.....	297,949	517,896	243,768	370,828	100,747
Other sorts.....	30,623	19,813	38,408	47,438	21,785
Aggregating.....	762,624	1,363,241	1,159,802	921,616	314,795
Sales in June.....	80,954	408,662	433,426	417,619	189,130
Stocks, June 30.....	681,670	954,579	726,376	503,997	125,665
Arrivals since Jan. 1.....	2,644,808	3,081,392	3,011,463	1,848,952	866,055
Congo sorts.....	2,456,254	2,785,134	2,480,026	1,605,106	745,784
Other sorts.....	188,554	296,258	522,437	243,846	120,271
Sales since Jan. 1.....	2,377,847	2,740,852	2,577,078	1,608,295	834,853

Hamburg.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Since our last report the rubber market here has been mainly without features of interest. During the latter part of June but little animation was shown by consumers on account of the impending semi annual stock taking. The approach of the Antwerp sales on July 3 tended further to increase the reticence of buyers, and since the latter date the unstable reports from Pará have left the market without any fixed tendency. Pará fine hard cure and Bolivian fine have received little attention, while a few transactions have been made in Mollendo fine spot at M 6.50 @ 6.55. Manáos negro heads have declined in value and are offered at M 5.15 @ 5.20. Of African sorts Mozambique balls were readily disposed of at nearly full prices. Kamerun and Batanga were weak and unchanged. Holders of Massai niggers were inclined to be liberal, but transactions were con-

finned within narrow borders. Benguela niggers, however, have proved quite firm, owing to cable advices that the natives are in revolt in the interior of Angola. The Portuguese government were drumming up troops and two transports were leaving for Angola. The last steamer which had left Benguela brought but a few remnants of rubber. Late transactions have been at the following prices, in marks per kilogram:

Pará fine, hard cure. <i>M</i>	6.65@6.60	Mozambique balls,	
Bolivian fine old	6.80@6.85	red, mixed	5 25@5.30
Mollendo fine	6.50@6.55	Massai niggers, red,	
Orinoco, fine	6.40@6.50	fine	5.70@5.75
Orinoco, mixed	6.20@6.25	Batanga small balls	3.80@3.85
Manios, negroheads	5.15@5.20	Gold Coast lumps	3.20@3.25
Mozambique balls,		Adelia balls, red	6.20@6.25
red, finest	6.25@6.40	Bissao balls, inferior	2.50@2.60
Mozambique balls,		Santos Mangabeira	5.30@5.35
red, fine	6.15@6.20	Colombian scrap, fine	5.20@5.25
Mozambique balls, red,		Colombian scrap,	
good	5.85@5.90	mixed and inferior	2.65@2.70

Hamburg, July 15, 1902.

Bordeaux:

ARRIVALS JUNE 1 TO JULY 15.

Soudan	.....	kilos	12,150
Cassamance	.....		10,500
Grand Bassam	.....		4,000
Conakry	.....		18,500
			45,150

PRICES (FRANCS PER KILOGRAM.)

With the exception of Conakry sorts, for which prices have been well maintained, there has been a general decline. Sales have been made during the above period as follows:

Soudan sorts:		Cassamance:	
Niggers, fine	6.50@6.75	A. P.	6.50
Do ordinary	5.75@6.10	A	5.25@5.40
Do earthy	4.50@5	A. M.	4.30@4.35
Twists, fine	6.60@6.70	B.	3.40@3.50
Do ordinary	6.25@6.50	Grand Bassam:	
Mayumba	4.05	Lumps	3.70@3.80
New Caledonia	7.50	Niggers	4.80@5.20

STOCKS, JULY 15.

Soudan twists	.....	Kilos.	3,500
Grand Bassam Niggers	.....	Kilos.	1,300
			8,020
			1,000

P. CHAUMEL.

London.

EDWARD TILL & Co., under date of July 1, report stocks:

	1902.	1901.	1900.
LONDON { Pará sorts	122	160	139
{ Borneo	10	52	44
{ Assam and Rangoon	428	530	464
{ Other sorts			
Total	560	742	647
LIVERPOOL { Pará	2051	1034	1482
{ Other sorts	984	1352	1524
Total, United Kingdom	3595	3128	3053
Total, June 1	3687	3502	3624
Total, May 1	3788	3597	3952
Total, April 1	3326	3522	3104
Total, March 1	3078	2989	1917
Total, February 1	2674	3129	1848
Total, January 1	2794	2901	1855

PRICES PAID DURING JUNE.

	1902.	1901.	1900.
Pará fine, hard	2/11 1/2 @ 2/11 1/2	3/8 @ 3/9	3/9 1/2 @ 4/1
Do soft		3/8 @ 3/8 1/2	
Negroheads, scrappy	2/4 @ 2/4 1/2	2/7 1/2	2/10 1/2 @ 2/11 1/2
Do Islands	1/11	2/1 1/2 @ 2/2 1/2	2/2 @ 2/3
Bolivian	3/0 @ 3/0 1/2	No sales.	3/11 @ 4/1 1/2

JULY 4.—There has been more animation in the market during a fortnight, and a fair business has resulted in Pará, at steady rates; fine hard cure spot 2s. 11 1/2 d.; old dry 3s.; fine soft lower, at 2s. 11 1/2 d. and 2s. 11 d. for near and distant; hard entrefine, 2s. 9 1/2 d.; negroheads easier, scrappy at 2s. 3 1/2 d., Cametá at 2s. 1/4 d. to 2s., and Island at 1s. 10 1/2 d. Peruvians

lower, with good business in fair to good ball at 2s. 3 1/2 d. to 2s. 4 d., and small sales of slab at 1s. 11 d. Mollendo fine sold at 2s. 11 1/2 d. and entrefine at 2s. 9 1/2 d.

At to-day's auctions the moderate supplies met a fair demand, but with holders being firm, only a small quantity was disposed of. Madagascar clean dark sold at 1s. 9 1/2 d.; Lamu ball good, 2s. 2 d.; Nyassaland good clean red and livery ball 2s. 6 d., to 2s. 6 1/2 d., slightly heated at 2s. 5 1/2 d., good clean pressed ball, 2s.; Assam good red slightly mixed, 2s. Balata dearer; fair Venezuelan block sold at 1s. 11 1/2 d.

JULY 11.—No auctions this week. The market is a little easier, though a fair trade has resulted, closing dull. Fine hard (including Bolivian), spot oldish 2s. 11 1/2 d., forward 2s. 11 1/2 d. to 2s. 11 1/2 d. Fine soft, 2s. 11 d. to 2s. 10 1/2 d. afloat, 2s. 11 d. distant delivery. Entrefine cheaper and plentiful. Negrohead easy; poor scrappy sold at 2s. 3 d., a small lot very good 2s. 3 1/2 d., Cametá 1s. 11 1/2 d., Island 1s. 10 1/2 d. sellers. A good business has been done in Peruvian at easier rates, fine ball at 2s. 4 d., and middling to fair at 2s. 3 d. to 2s. 3 1/2 d. Slab sold at 1s. 11 d. and fine at 2s. 11 1/2 d. to 2s. 11 d. Mollendo: Fine sold at 2s. 11 1/2 d., and negroheads at 2s. 2 1/2 d. Medium grades continue scarce and wanted.

JULY 18.—The market for Pará's firmer, and a fair business done. Fine hard, fairly old import, sold at 2s. 11 1/2 d. and two years old at 3s. 1/4 d.; entrefine 2s. 9 d. @ 2s. 9 1/2 d.; oldish Bolivian, 3s. Fine soft cure now landing sold at 2s. 10 1/2 d., and forward at 2s. 11 d., with entrefine 2s. 8 1/2 d. Negro-heads almost neglected; scrappy sold at 2s. 3 1/2 d.; Cametás forward at 2s. and Island at 1s. 10 1/2 d. Mollendo: small sales of fine at 2s. 11 1/2 d. The small supplies of medium kinds in auction today mostly of undesirable quality, and scarcely anything sold. Pontianak steady; 163 cases offered and retired.

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

July 3.—By the steamer *Bernard*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total
A. T. Morse & Co.	25,200	14,800	59,500	18,800	118,300
Reimers & Co.	35,100	12,600	32,700	13,500	93,900
New York Commercial Co.	19,600	2,100	17,900	48,300	87,900
Boston Rubber Shoe Co.				32,400	32,400
United States Rubber Co.				16,200	16,200
William Wright & Co.			5,100		5,100
Goodyear Rubber Co.			1,900		1,900
G. Amsinck & Co.		1,400			1,400
Total	79,900	30,900	117,100	129,200	357,100

July 15.—By the *Basil*, from Manáos and Pará:

New York Commercial Co.	123,700	28,200	68,400		220,300
A. T. Morse & Co.	19,800	4,200	50,800		74,800
Reimers & Co.	27,800	7,100	24,500	5,500	64,900
Ed. T. Reeks & Co.	1,000	300	200	17,400	18,900
Boston Rubber Shoe Co.				15,600	15,600
United States Rubber Co.	3,900	1,400		7,900	13,200
William Wright & Co.			5,700		5,700
Goodyear Rubber Co.			5,600		5,600
G. Amsinck & Co.	1,300				1,300
Total	177,500	41,200	155,200	46,400	420,300

July 25.—By the steamer *Fluminense*, from Manáos and Pará:

New York Commercial Co.	48,600	23,000	103,100	9,300	184,000
A. T. Morse & Co.	3,800	5,300	48,100		57,200
Reimers & Co.	16,800	8,600	12,000		37,400
Boston Rubber Shoe Co.				22,700	63,000
United States Rubber Co.	1,600	200	1,600	19,000	22,400
N. Y. and Java Trading Co.	1,000		1,000	2,000	4,000
William Wright & Co.			2,500		2,500
G. Amsinck & Co.	400	100	100		600
Total	72,200	37,200	191,100	70,600	711,100

[NOTE.—The Steamer *Dunstan* from Pará, is due at New York August 4, with 135 tons Rubber and 35 tons Caucho.]

PARA RUBBER VIA EUROPE.

		POUNDS.
JUNE 23.—By the <i>Umbria</i> =Liverpool:		
Ideal Rubber Co. (Fine)	4,500	
JULY 7.—By the <i>Cuzco</i> =Mollendo:		
New York Commercial Co. (Fine)...	4,000	
New York Commercial Co. (Coarse)...	1,000	5,000
JULY 12.—By the <i>Campania</i> =Liverpool:		
George A. Alden & Co. (Fine).....	11,200	
Reimers & Co. (Fine).....	11,500	22,700
JULY 16.—By the <i>Oceanic</i> =Liverpool:		
Reimers & Co. (Fine).....	33,500	
George A. Alden & Co. (Fine).....	60,000	93,500
JULY 21.—By the <i>Um'ria</i> =Liverpool:		
Reimers & Co. (Fine).....	29,000	
George A. Alden & Co. (Fine).....	5,000	34,000

OTHER ARRIVALS AT NEW YORK

CENTRALS.

		POUNDS.
JUNE 21.—By the <i>Byron</i> =Bahia:		
J. H. Rosbach & Bros.....	12,300	
Booth & Co.....	6,000	18,300
JUNE 23.—By the <i>Pucatan</i> =Mexico:		
Graham, Hinckley & Co.....	3,000	
H. Marquardt & Co.....	2,000	
E. Steiger & Co.....	3,000	
L. N. Chemedlin & Co.....	1,000	8,000
JUNE 24.—By the <i>Allegany</i> =Cartagena:		
American Trading Co.....	2,000	
Lawrence, Johnson & Co.....	1,500	
Roldan & Van Sickle.....	1,000	
G. Amsinck & Co.....	200	4,700
JUNE 24.—By the <i>Orizaba</i> =Colon:		
Isaac Brandon & Bros.....	9,300	
Hirzel, Feltman & Co.....	3,800	
American Trading Co.....	3,100	
G. Amsinck & Co.....	2,900	
Dumarest & Co.....	2,500	
Lawrence Johnson & Co.....	1,800	
Silva, Busenius & Co.....	1,500	
Frame, Alston & Co.....	1,700	
A. Santos & Co.....	1,100	
Eggers & Heinlein.....	1,000	
Kunhardt & Co.....	700	29,400
JUNE 24.—By the <i>El Cid</i> =New Orleans:		
A. T. Morse & Co.....	4,500	
G. Amsinck & Co.....	3,000	
L. N. Chemedlin & Co.....	1,500	
For Europe.....	2,500	
Manhattan Rubber Mfg. Co.....	4,200	15,700
JUNE 28.—By the <i>Lucania</i> =Liverpool:		
Reimers & Co.....	2,200	
JUNE 30.—By the <i>Havana</i> =Mexico:		
E. Steiger & Co.....	2,000	
Thebaud Brothers.....	1,200	
H. Marquardt & Co.....	1,300	
E. N. Tibbals & Co.....	1,000	5,500
JULY 1.—By the <i>Alene</i> =Greystown:		
E. B. Strout.....	2,000	
G. Amsinck & Co.....	1,400	
D. A. De Lima & Co.....	1,500	5,000
JULY 1.—By the <i>Adenice</i> =Colon:		
Isaac Brandon & Bros.....	2,700	
G. Amsinck & Co.....	2,000	
Eggers & Heinlein.....	1,100	5,800

CENTRALS—Continued.

JULY 3.—By the <i>El Dia</i> =New Orleans:			
A. T. Morse & Co.....	3,000		
M. G. de Leon.....	600	3,600	
JULY 7.—By the <i>Esperanza</i> =Mexico:			
Graham, Hinckley & Co.....	3,000		
JULY 7.—By the <i>Wordsworth</i> =Bahia:			
J. H. Rosbach & Bros.....	37,500		
JULY 7.—By the <i>Etruria</i> =Liverpool:			
Joseph Cantor.....	5,600		
Reimers & Co.....	3,900	9,000	
JULY 9.—By the <i>Alfianca</i> =Colon:			
A. Santos & Co.....	5,700		
Hirzel, Feltman & Co.....	5,600		
Dumarest & Co.....	1,600		
Frame, Alston & Co.....	1,500		
G. Amsinck & Co.....	800		
Kunhardt & Co.....	800		
W. R. Grace & Co.....	400		
American Trading Co.....	600	17,000	
JULY 12.—By the <i>Vigilante</i> =Mexico:			
E. Steiger & Co.....	4,000		
Thebaud Brothers.....	1,500		
H. Marquardt & Co.....	500	6,000	
JULY 14.—By the <i>Louisa</i> =New Orleans:			
A. T. Morse & Co.....	3,500		
Manhattan Rubber Mfg. Co.....	3,000		
G. Amsinck & Co.....	3,600		
Eggers & Heinlein.....	300		
For Europe.....	2,500	12,000	
JULY 15.—By the <i>Finances</i> =Colon:			
Hirzel, Feltman & Co.....	3,500		
Isaac Brandon & Bros.....	3,800		
A. Santos & Co.....	5,700		
G. Amsinck & Co.....	4,500		
American Trading Co.....	4,100		
Dumarest & Co.....	2,300		
Harberger & Stack.....	800		
D. A. De Lima & Co.....	700		
Roldan & Van Sickle.....	100	30,000	
JULY 15.—By the <i>Athos</i> =Greystown:			
E. B. Strout.....	4,000		
G. Amsinck & Co.....	2,500		
Livingstone & Co.....	2,000		
A. D. Straus & Co.....	400		
Jimenez & Escobar.....	300		
United Fruit Co.....	600		
Lawrence Johnson & Co.....	300	10,100	
JULY 17.—By the <i>Grayfield</i> =Colon:			
G. Amsinck & Co.....	3,700		
W. Loalza & Co.....	1,000		
Bloom Brothers.....	300	5,000	
JULY 21.—By the <i>Alfai</i> =Cartagena:			
D. A. De Lima & Co.....	2,500		
Kunhardt & Co.....	2,000		
Isaac Brandon & Bros.....	1,000		
Lawrence Johnson & Co.....	3,500		
C. Wessels & Co.....	800	9,800	
JULY 22.—By the <i>Tennyson</i> =Bahia:			
J. H. Rosbach & Bros.....	17,500		
Eggers & Heinlein.....	5,300	22,800	
JULY 22.—By the <i>Orizaba</i> =Colon:			
G. Amsinck & Co.....	5,000		
Isaac Brandon & Bros.....	4,700		
Hirzel, Feltman & Co.....	2,300		
D. N. Carrington & Co.....	1,800		
Lawrence Johnson & Co.....	1,300		

CENTRALS—Continued.

Eggers & Heinlein.....	800	
Kunhardt & Co.....	800	
R. G. Barthold.....	400	16,700

AFRICANS.

		POUNDS.
JUNE 23.—By the <i>Umbria</i> =Liverpool:		
Reimers & Co.....	23,000	
George A. Alden & Co.....	10,000	
Otto Meyer (Boston).....	7,000	40,000
JUNE 24.—By the <i>Panama</i> =Bordeaux:		
George A. Alden & Co.....	11,000	
JUNE 26.—By the <i>Majestic</i> =Liverpool:		
George A. Alden & Co.....	11,500	
Otto Meyer (Boston).....	2,500	14,000
JUNE 26.—By the <i>Graf Waldersee</i> =Hamburg:		
Reimers & Co.....	24,000	
A. T. Morse & Co.....	22,500	
George A. Alden & Co.....	9,000	55,500
JUNE 28.—By the <i>Lucania</i> =Liverpool:		
Reimers & Co.....	16,000	
JUNE 30.—By the <i>Zeeland</i> =Antwerp:		
Reimers & Co.....	15,000	
JULY 2.—By the <i>Pennsylvania</i> =Hamburg:		
Otto Meyer (Boston).....	30,000	
A. T. Morse & Co.....	7,000	
Reimers & Co.....	4,500	41,500
JULY 7.—By the <i>Etruria</i> =Liverpool:		
George A. Alden & Co.....	25,000	
JULY 7.—By the <i>Peninsula</i> =Lisbon:		
Reimers & Co.....	45,000	
A. T. Morse & Co.....	27,000	72,000
JULY 8.—By the <i>Tauris</i> =Liverpool:		
A. T. Morse & Co.....	55,000	
Reimers & Co.....	11,500	
Joseph Cantor.....	4,500	74,000
JULY 9.—By the <i>Moltke</i> =Hamburg:		
A. T. Morse & Co.....	7,500	
Otto Meyer (Boston).....	3,000	10,500
JULY 12.—By the <i>Campania</i> =Liverpool:		
Robinson & Tallman.....	27,000	
Livesey & Co.....	11,500	
Ideal Rubber Co.....	7,500	
Reimers & Co.....	12,500	58,500
JULY 15.—By the <i>Vaderland</i> =Antwerp:		
A. T. Morse & Co.....	55,000	
Joseph Cantor.....	30,000	
Reimers & Co.....	10,000	
William Wright & Co.....	600	101,000
JULY 16.—By the <i>Oceanic</i> =Liverpool:		
Reimers & Co.....	47,000	
A. T. Morse & Co.....	25,000	
Joseph Cantor.....	5,000	77,000
JULY 17.—By the <i>Patricia</i> =Hamburg:		
A. T. Morse & Co.....	9,000	
Reimers & Co.....	4,000	13,000
JULY 21.—By the <i>Umbria</i> =Liverpool:		
Otto Meyer (Boston).....	9,000	
Reimers & Co.....	5,000	14,000
JULY 21.—By the <i>Bovic</i> =Liverpool:		
George A. Alden & Co.....	112,000	
JULY 22.—By the <i>Kronland</i> =Antwerp:		
George A. Alden & Co.....	180,000	
A. T. Morse & Co.....	27,000	

EXPORTS OF INDIA-RUBBER FROM MANAOS—FIRST HALF OF 1902.

BY COURTESY OF WITT & CO. [WEIGHTS IN KILOGRAMS.]

EXPORTERS.	NEW YORK.					LIVERPOOL.					HAVRE AND HAMBURG.					GRAND TOTAL.
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Prusse, Dusendachon & Co.	647,144	199,146	229,956	277,916	1,354,162	808,572	160,861	125,404	393,582	1,488,419	79,731	43,072	19,560	15,450	157,813	3,000,394
Witt & Co.	583,992	158,943	145,865	357,541	1,246,341	420,042	85,221	134,557	103,629	743,449	5,280	—	5,400	—	10,680	2,000,470
A. H. Alden.....	620,070	166,106	211,791	186,089	1,184,066	64,160	14,120	4,080	92,130	177,490	25,536	15,840	—	16,500	47,876	1,419,432
Neale & Staats.....	—	—	—	10,100	10,100	128,535	31,970	21,590	82,452	234,547	86,080	25,440	25,010	43,890	181,020	425,667
Andersen Suco.....	3,360	—	2,970	6,750	13,080	189,066	69,996	66,032	16,670	337,754	—	—	—	—	—	350,834
Actunes & Co.....	14,668	8,601	3,847	18,780	46,796	184,280	40,530	31,310	39,210	295,330	—	—	—	—	—	341,126
Mello & Co.....	50,150	7,820	6,720	—	64,690	115,439	29,580	13,680	—	158,699	—	—	—	—	—	223,380
Marius & Levy.....	2,210	—	810	—	3,020	2,781	314	1,963	186	5,246	32,206	6,496	28,930	135,929	203,561	211,887
Brookhurst & Co.....	15,268	1,062	3,479	—	20,409	22,434	4,738	30,481	79,316	136,960	654	—	403	—	757	158,135
Kahn, Pollack & Co.....	—	—	—	—	—	4,260	—	2,040	—	6,300	76,742	15,088	253	1,624	127,607	133,897
Reeks & Astlett.....	11,620	2,223	4,432	106,591	124,866	—	—	—	—	—	—	—	—	—	—	124,866
Harros & Levy.....	—	—	—	—	—	7,466	1,218	10,401	53,017	72,102	—	—	—	—	—	72,102
Schilli & Sobrinho.....	—	—	—	—	—	—	—	—	—	—	31,584	6,812	11,905	967	53,718	55,718
Freitas Fer. & Co.....	—	—	—	—	—	24,960	4,800	4,770	13,354	47,880	—	—	—	—	—	47,880
Bdo Bockris & Co.....	—	—	—	—	—	1,190	170	380	—	1,720	9,180	3,740	5,880	—	18,800	20,520
Sears Rubber Co.....	11,713	2,885	3,538	196	18,332	—	—	—	—	—	—	—	—	—	—	18,332
Denis Cronan & Co.....	—	—	—	—	—	—	—	—	—	—	4,750	1,530	1,320	—	7,600	7,600
Sundry Shippers.....	52,629	14,037	12,724	13,881	93,274	60,285	8,080	11,202	2,670	82,237	27,040	13,830	6,520	8,712	56,102	231,613
Iquitos, Transit.....	—	—	—	—	—	85,623	7,074	83,160	132,613	308,470	61,510	10,152	66,925	130,524	269,111	577,581
Total.....	2,012,754	559,423	628,162	977,867	4,178,196	2,119,064	458,672	540,030	978,827	4,096,593	443,343	141,500	205,806	258,496	1,144,145	9,418,934

AFRICANS—Continued.		EAST INDIANS—Continued.		BALATA.	
Reimers & Co.	46,000	JULY 7.—By the <i>Gloosecap</i> =Singapore:		JUNE 30.—By the <i>Margaree</i> =Trinidad:	
Robinson & Tallman	8,000 261,000	Reimers & Co.	22,500	George A. Alden & Co.	3,800
JULY 22.—By the <i>Blucher</i> =Hamburg:		JULY 14.—By the <i>Minneapolis</i> =London:		G. Amsinck & Co.	500 4,000
Reimers & Co.	18,000	R. Brans & Co.	17,000	JULY 11.—By the <i>Maravel</i> =Trinidad:	
Robinson & Tallman	17,000	GUTTA-PERCHA AND BALATA		George A. Alden & Co.	6,000
A. T. Morse & Co.	12,000	FOUNDS.		G. Amsinck & Co.	1,000 7,000
George A. Alden & Co.	13,500 60,500	JUNE 26.—By the <i>Graf Waldersee</i> =Hamburg:		BOSTON ARRIVALS.	
EAST INDIAN.		FOUNDS.		FOUNDS	
JUNE 23.—By the <i>Border Knight</i> =Calcutta:		To Order	5,500	JUNE 16.—By the <i>Desonian</i> =Liverpool:	
Reimers & Co.	2,000	JULY 7.—By the <i>Maristow</i> =Singapore:		Otto Meyer—African	2,175
JULY 7.—By the <i>Maristow</i> =Singapore:		R. Brans & Co.	16,000	JUNE 16.—By the <i>Southwark</i> =Liverpool:	
R. Brans & Co.	22,500	George A. Alden & Co.	1,000 17,000	George A. Alden & Co.—African...	55,168
PORTUGAL.		JULY 9.—By the <i>Moltke</i> =Hamburg:		JUNE 23.—By the <i>Iernia</i> =Liverpool:	
JULY 7.—By the <i>Maristow</i> =Singapore:		To Order	9,000	Reimers & Co.—African	17,500
R. Brans & Co.	150,000	JULY 12.—By the <i>Martello</i> =Hull:		JUNE 27.—By the <i>Philadelphian</i> =Liverpool:	
Reimers & Co.	335,000	To Order	2,800	Kramisch & Co.—African	11,211
Robinson & Tallman	100,000	JULY 22.—By the <i>Blucher</i> =Hamburg:		Total Imports	98,062
George A. Alden & Co.	112,000	To Order	8,500		
Littlejohn & Parsons	35,600 132,060				

JUNE EXPORTS OF INDIA-RUBBER FROM PARA.

IN KILOGRAMS. 1000 KILOGRAMS=2204.6 POUNDS.

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL.
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Emok, Prusse & Co.	4,080	1,020	27,773	—	32,873	83,728	10,945	21,740	—	116,416	149,289
Frank da Costa & Co.	3,472	5,130	77,044	150	85,796	96,782	7,476	33,812	—	138,070	223,866
Adelbert H. Alden	57,800	13,730	47,250	997	119,777	30,600	2,700	8,060	—	41,360	162,037
Singlehurst, Brocklehurst & Co.	—	—	—	—	—	556	141	25	—	722	722
Kanthack & Co.	—	—	—	—	—	—	—	1,280	—	1,280	1,280
Neale & Staats	—	—	—	—	—	9,496	1,015	7,671	3,020	21,202	21,202
Denis Crouan & Co.	—	—	—	—	—	3,017	342	8,133	—	11,492	11,492
R. Suarez & Co.	—	—	—	—	—	34,720	12,446	7,771	—	54,937	54,937
Pires, Teixeira & Co.	—	—	—	—	—	5,987	332	1,565	—	7,884	7,884
Sundry small shippers	—	—	—	—	—	—	—	11,160	—	11,160	11,160
Direct from Iquitos	—	—	—	—	—	10,446	501	3,162	76,844	90,953	90,953
Direct from Manaus	131,899	32,151	40,024	120,176	330,250	72,832	16,588	22,490	157,919	269,829	600,079
Total for June	197,251	52,031	193,091	121,323	563,696	348,164	52,489	127,769	237,783	766,205	1,334,901
Total for July-May	6,833,124	1,709,950	4,023,685	1,057,415	13,654,174	8,748,841	1,674,504	2,534,768	1,987,928	14,946,039	28,600,213
TOTAL, CROP YEAR	7,030,375	1,761,981	4,221,776	1,208,738	14,222,870	9,097,005	1,726,993	2,662,537	2,225,711	15,712,244	29,935,114

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.				GREAT BRITAIN.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
May, 1902	4,505,487	341,857	4,163,630	May, 1902	3,889,536	2,519,936	1,069,600
January-April	19,789,635	1,232,134	18,557,501	January-April	19,686,688	10,074,960	9,611,728
Five months, 1902	24,295,122	1,573,991	22,721,131	Five months, 1902	23,576,224	12,894,896	10,681,328
Five months, 1901	28,805,634	1,327,443	27,478,191	Five months, 1901	22,632,176	12,602,912	10,029,264
Five months, 1900	20,959,932	1,934,721	20,959,932	Five months, 1900	27,330,240	14,225,680	13,104,560
GERMANY.				ITALY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
May, 1902	3,054,700	1,424,060	1,630,640	May, 1902	146,960	51,040	95,920
January-April	9,933,220	3,278,220	6,655,000	January-April	515,020	42,460	472,560
Five months, 1902	12,987,920	4,702,280	8,285,640	Five months, 1902	661,480	93,500	568,480
Five months, 1901	10,606,860	2,774,200	7,832,660	Five months, 1901	711,920	92,840	629,080
Five months, 1900	12,850,860	4,070,440	8,780,420	Five months, 1900	708,620	—	—
FRANCE.				NOTE.—German statistics include Gutta-percha Balata, old rubber, and substitutes. French and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canadian consumption.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.				
May, 1902	1,437,260	805,000	634,260				
January-April	6,569,640	2,766,720	3,802,920				
Five months, 1902	8,006,900	3,569,720	4,437,180				
Five months, 1901	7,292,780	3,193,080	4,099,700				
Five months, 1900	6,668,200	2,430,340	4,237,860				

